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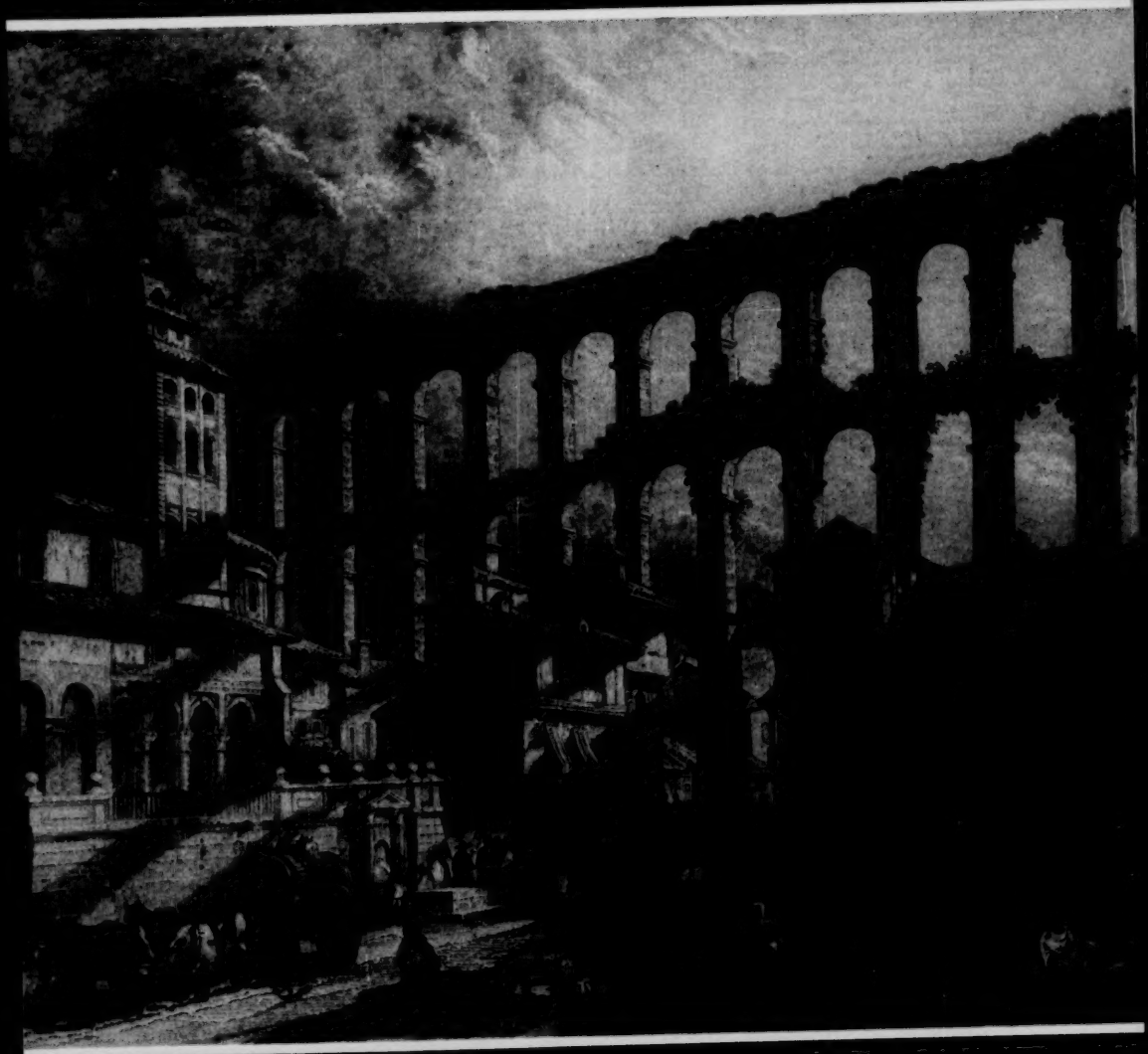

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## Marginal Notes

### The Plumbing Code —

During the last few weeks, news reports have hinted at possible revolutionary new developments in applying atomic power for industrial use. Despite this evidence that a new era may be almost within our grasp, there are others indicating that mankind is still bound to former outmoded ways. One tie to the past that engineering groups and other forward-looking citizens have been trying for years to break is that of out-of-date and nonuniform building and plumbing requirements. As Professor Dawson points out (page 37), this problem is one that affects every one of us. Out-of-date plumbing codes not only hit at our pocketbooks but may also affect the health of the community.

The proposed national plumbing code is a good example of standardization procedures developing up-to-date requirements on a national scale. A revision of the 1949 American Standard, this edition coordinates the requirements of a number of plumbing codes which have received nationwide recognition. It is now being circulated to the groups interested in plumbing. If they recommend approval of the code, it will be submitted to ASA for approval as American Standard. The American Public Health Association and the American Society of Mechanical Engineers are the sponsor organizations, and the proposed unified code is available in two editions—one a Government edition and the other published by ASME.

The coordinating committee which did the work on the new edition included the American Public Health Association; the American Society of Mechanical Engineers; the American Society of Sanitary Engineering; Building Officials Conference of America; Conference of State Sanitary Engineers; National Association of Master Plumbers; Uniform Plumbing Code Committee, and Western Plumbing Officials Association. This coordinating committee used results

of research carried out at the National Bureau of Standards, the University of Iowa, the University of Illinois, the U.S. Public Health Service Environmental Center at Cincinnati, and other laboratories.

Whether the good work done by the standardizing committee will actually be put to use in the local municipal codes and regulations is a question that only the citizens of the individual communities can answer. Already its influence is being felt. So far it has been put into effect by several agencies of the Federal Government for construction in the present emergency. Also, should the standard be approved as American Standard, adoption by several cities in New York State will follow shortly. Syracuse is the first of these cities to give active consideration to the new standard.

**About Our Cover**

Even today, skeletons of aqueducts built by the Romans—such as this at Segovia, Spain—stand as monuments to ancient Rome's scientific water supply. Before 312 B.C., Rome itself depended on springs for its water; in that year Appius Claudius constructed the first aqueduct, 7 m. in length, underground. In 144 B.C., the Aqua Marcia was built to bring Rome's water supply from the Sabine hills (these springs are still in use).

Well-built sewers drained the city during the empire. The Cloaxen Maxima, which opens out near the Palatine bridge, was probably built in the latter part of the 2nd Century, B.C. It remained in use until the beginning of the 20th Century.

The etching used as our cover picture was published for Herrmann J. Mayer, New York, in 1852.

*Opinions expressed by authors in* STANDARDIZATION *are not necessarily those of the American Standards Association.*

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**Standardization is dynamic, not static. It means not to stand still, but to move forward together.**

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ASA

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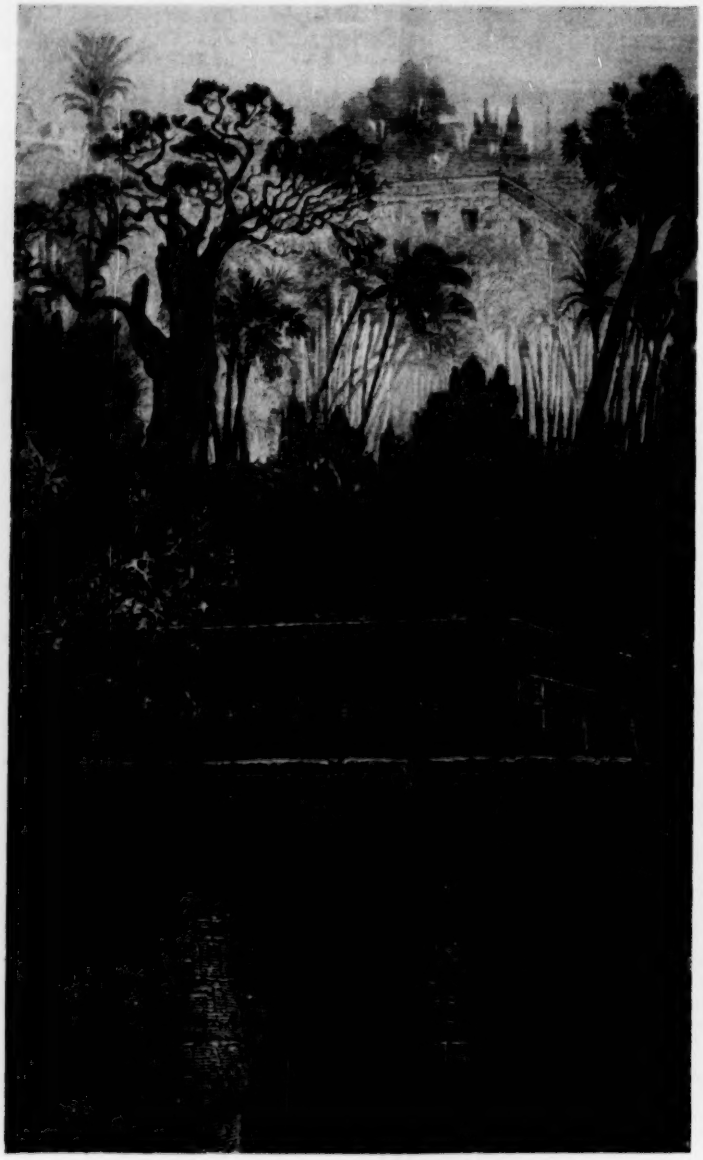


## The Hanging Gardens of Babylon

The famous Hanging Gardens of Babylon—one of the seven wonders of the ancient world—were supplied with water by means of a hydraulic apparatus resembling a chain-pump. Built by Nebuchadnezzar for his favorite Amytis (according to legend), they rose to a height of three stories above the palace and were covered with pines, cypresses, and cedars. The foliage was supported by subterranean arches. Little is known, however, about the Assyrians' methods of disposing of their water wastes.

# The National Plumbing Code

**by F. M. Dawson**

**Dr Dawson is Dean of the College of Engineering, State University of Iowa, Iowa City, Iowa, and is chairman of the Coordinating Committee for a National Plumbing Code. He is now on a four-month assignment to Pakistan as Special Lecturer in Hydraulic Engineering at Punjab University, Lahore.**

*This paper was presented during a session on "Standards That Affect You and Me" at the Second National Standardization Conference of the American Standards Association, The Waldorf-Astoria, New York.*

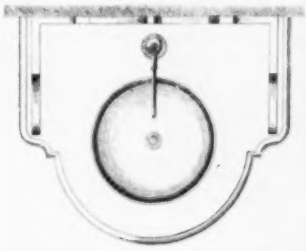
PLUMBING has a very definite and direct connection with the health of the individual and the public.

Plumbing, of course, is old. Remains of ancient civilizations, excavated in recent years, clearly establish that there was knowledge of the flow of liquids as long ago as 4000 B.C. The Assyrians, Egyptians, Greeks, and Romans all flourished because they knew about bringing in fresh water and taking out water wastes. The Hanging Gardens of Babylon, the Roman canals and aqueducts, are a matter of common knowledge but less well known is what ancient civilizations did with waste. Recent investigations show that our ancestors knew a lot.

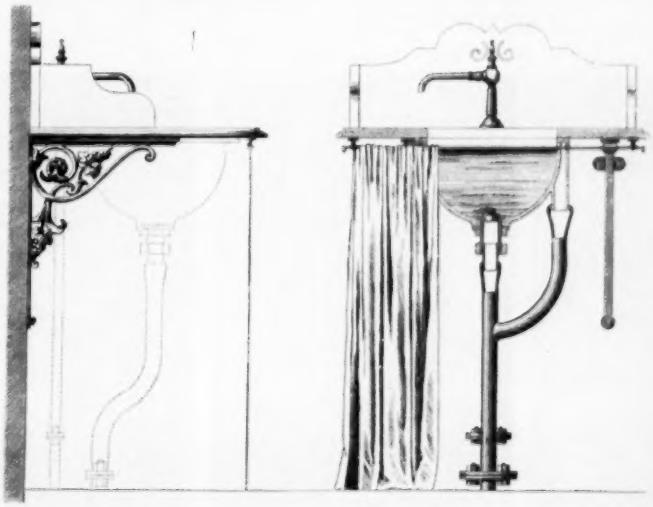
On the other hand, it must be realized that the art and science of waste disposal and supplying of water passed into oblivion around 500 A.D. Afterwards, the so-called Dark Ages were so bad that we read in history of pestilences, which, we realize, were almost all water-borne and due to accumulated waste which caused diseases. Further, we realize that not until quite modern times did we again find the principles on which we should work. From ancient times up to the present the loss of life from disease because of the lack of sanitary conveniences has been greater than from all the wars in history. As a matter of fact, it would not take much to upset conditions as we now have them. Our own country would then revert, as certain countries of the world have reverted during their history, to conditions under which it would be unsafe for people to live. For example, anyone planning a trip to the Far East finds it necessary to take precautions.

Recently a student came to see me from India. In his opinion, the poorest family in Iowa City lives better than the richest family in his particular town in India. When I asked him "How come?" he said, "The poorest man in Iowa City can go anywhere and get a drink of pure water. He doesn't have to worry about what hapens to the waste. You can't do that in India." India has a problem of its own, one that we don't have. At the same time standards are important if we are going to maintain public health.

Much has been written in the past about water supply and little about drainage, but the two must go together. Three things are important:



**One of the Nineteenth Century's ornately decorated wash basins—a far cry from today's simple, streamlined designs. Some building and plumbing codes, in effect since this same period, are also out of date, and dangerous to city dwellers' health.**



(1) Water supply to homes, factories, apartment houses—that is, the water supply to buildings. It is very important to have pure water any time of the day or night.

(2) Fixtures in the buildings of factories or homes. These have to be standardized.

(3) Removal of liquid waste from the buildings and how to accomplish it with the least difficulty.

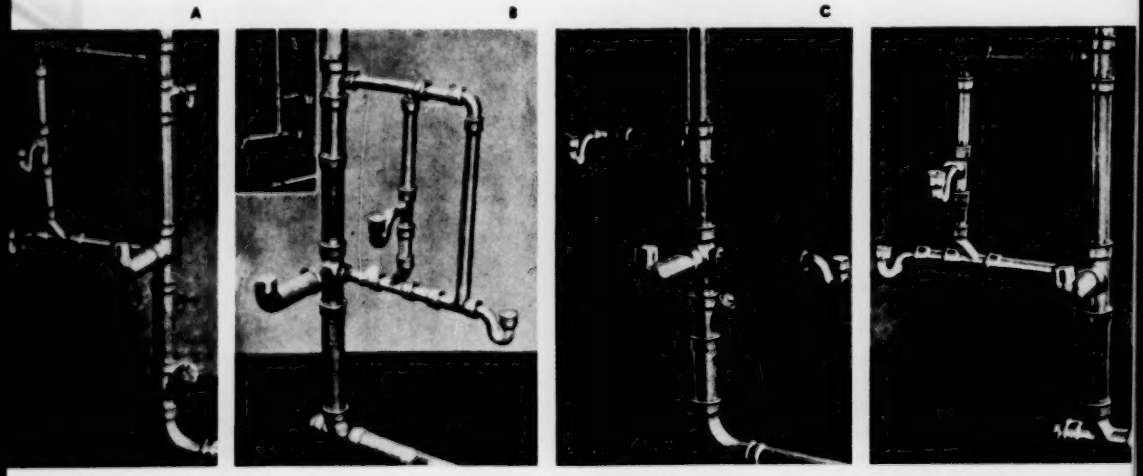
Correct engineering provisions for these three items must be in a plumbing code if we are to make the whole system work right.

Plumbing in the United States, as we know it, is relatively new. Not until about 1880 was the principle of the venting system in drainage pipes known. The necessity of vents is now well understood. However, the pendulum swung too far and, in some instances, more vents and more venting were required than was actually necessary under normal conditions. In some cities, vents were required in addition to those needed to keep the pressure in the drain pipes at plus or minus one inch level of water. The important thing is to keep the pressure—positive or negative—within that little one inch of water pressure. That takes some doing. It is one of the reasons cities have these regulations. That pressure must be maintained if the seals in the U traps under the fixtures are to be kept full of water thus maintaining a distinct barrier between the sewer and the house or shop or factory. But, the pendulum went too far in some cases.

Now we are engaging in testing and in laboratory attempts to find out what is scientifically correct. We are not finished yet, as a matter of fact, nor will we be for many years to come. We have many people investigating this problem but time is needed to see how the experiments work out. The results cannot be determined by laboratory test alone. Experience in practice is also necessary. In certain older cities where there are uneven, small, poorly laid sewers, special consideration may be required. This is particularly true on the seaboard. Here we have a difficult problem that does not exist in inland cities. That is the rise and fall of the tides, which vary the level of the water surface in the sewers.

As time has gone on, various codes have been introduced. Basically, all go back to the power of the police to protect public health. The question is one of getting the most for the money and at the same time of protecting public health and doing it in a satisfactory way. There is no such thing as a national law to do this work. The police power goes back to the states and from those states to the cities and towns. This is the reason for so many different codes. Some years ago I found 1026 codes in the United States; there were many more but I stopped counting. Many were alike or nearly alike. There were five codes that stood out. In the main these codes agreed with one another. However, they differed in detail to such an extent that an effort was made to bring them together and get out one code that would be a reason-

**One Reason Why a Coordinating Committee on Plumbing Codes Was Organized. These pictures illustrate the methods of venting as required in the five most important plumbing codes. Venting, which creates a vacuum that prevents backflow of waste materials into the fresh water supply, is of primary importance in health protection. The most complicated system is individual venting (F) where each fixture is vented through a separate pipe extending from the main waste pipe. A simpler method is stack venting (E), the individual vents running directly into the main pipe. The Western Plumbing Officials Association System (B) is a variation of the system of individual venting. The system recommended by the Building Officials Conference of America (D) and the one recommended in the American Standard Plumbing Code (A) are more simplified versions and are almost identical. The Uniform Plumbing Code Committee recommendations (C) are a simplified version of the stack venting system. This last is the arrangement that is being recommended by the Coordinating Committee.**



able compromise on all points.

I became interested in plumbing codes in 1929 for the following reasons. Actually there are something like 1½ million miles of pipe in buildings in the United States; 2½ if manufacturing plants are included. There are 400 million to 500 million valves and faucets in the United States; about 20 million were installed in 1950. That gives an idea of the magnitude of the plumbing problem. As a teacher and scientist, the idea came to me that, if I could improve or do anything helpful to standardize as much as a fraction of a percent of the valves and faucets, I would be doing a better service than anything else I could undertake. I took this particular area for my investigations. The field has not yet been thoroughly covered and much

(*continued on page* 61)

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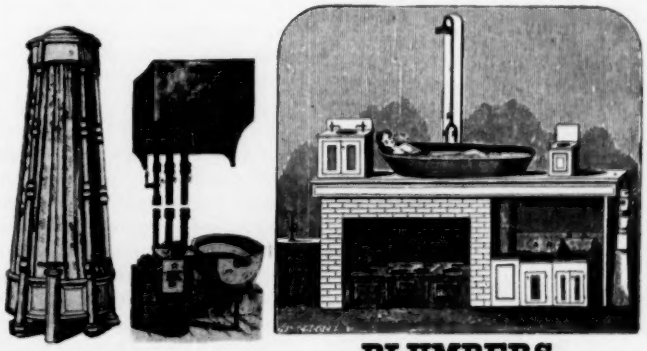
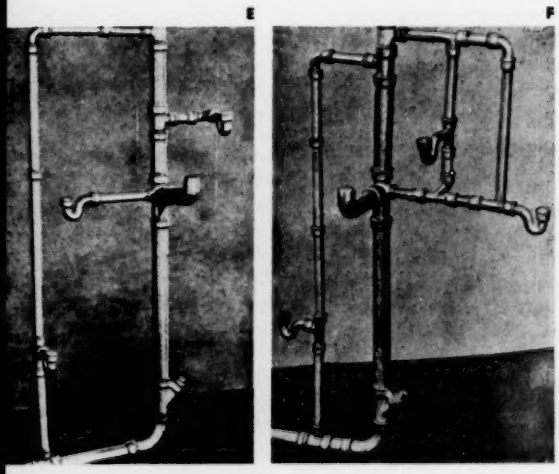



**These shower baths, sitz baths, folding bathtubs, and sanitary toilets were up-to-date equipment as advertised from 1830 to 1880. The ornate tub at the bottom of the picture was the last word in 1892. The first word in bathtubs, in 1835, is shown in the Lockwood, Zane & Lumb advertisement. This illustrates a bathroom built on the second floor of the house immediately above the kitchen. Tub and washstand were supplied with hot and cold running water. There was also a shower bath! John Blackburn published this ad in 1839.**



From PIONEER AMERICA by Carl W. Drepperd
Published by Doubleday & Co., Inc.

# Interpretations of Code for Pressure Piping

From Mechanical Engineering, October 1951

FROM time to time certain actions of Sectional Committee B31 will be published for the information of interested parties. While these do not constitute formal revision of the Code, they may be utilized in specifications, or otherwise, as representing the considered opinion of the committee.

Pending revision of the Code for Pressure Piping, ASA B31.1-1951, the sectional committee has recommended that ASME, as sponsor, publish selected interpretations so that industry may take immediate advantage of corresponding proposed revisions. Case Nos. 5, 6, 7, 8, and 9 are published herewith as interim actions of Sectional Committee B31 on the Code for Pressure Piping. They will not constitute a part of the Code until formal action has been taken by the ASME and by the American Standards Association on a revision of the Code.

### Case No. 5

*Inquiry:* In view of the data in the Miller-Heger report, may increased stresses be used under Section 1 for 1¼ per cent chromium ½ per cent molybdenum material conforming to ASTM Specification A 158 Grade P-11 and comparable forging grades?

*Reply:* It is the opinion of the Committee that pending a general revision of the stress tables, the following stresses may be used under Section I of the Code for ASTM Specification A 158 Grade P-11 material and comparable forging grades:

| Temperature, F | S value, psi |
|---|---|
| 650 | 12,000 |
| 700 | 12,000 |
| 750 | 12,000 |
| 800 | 12,000 |
| 850 | 11,500 |
| 900 | 10,500 |
| 950 | 8,800 |
| 1,000 | 6,250 |
| 1,050 | 4,400 |
| 1,100 | 3,200 |

### Case No. 6

*Inquiry:* In view of the publication of the new American Petroleum Institute Standard API-600 February, 1951, containing Tables 18 and 19 having increased pressure-temperature ratings for 4-6 percent chrome steel to ASTM A217-C5 and ASTM A182-F5 over those now shown in Tables 19 and 20 of Section 3, Oil Piping of the Code for Pressure Piping, may these increased ratings be used for valves, flanges, and fittings made of these materials in oil piping applications?

*Reply:* It is the opinion of the committee that pending a general revision of the Code, the pressure-temperature ratings shown in Tables 17 and 18 (pages 48 and 49, respectively) for the temperature range of 100 to 750 F may be substituted for the values shown in Tables 19 and 20 (pages 50 and 51, respectively) for the same temperature ratings.

### Case No. 7

EXPLANATORY NOTE: The Sectional Committee on the Code for Pressure Piping wisely decided to coordinate its work in the field of establishing maximum allowable stresses for materials with that of the ASME Boiler Code Committee, and through proper liaison, representative members of the Code for Pressure Piping have been serving also as members of the Boiler Code Subcommittee on Stress Allowances for Ferrous Materials in order that the fundamental work on the properties of the materials might be carried on most expeditiously and without duplication of effort.

This committee has leaned heavily on the data contained in the Miller-Hager Report (ASTM Publication No. 100), but has supplemented this report by additional data submitted by other research groups. After long and careful deliberations, the committee selected values for ultimate strength, yield strength, creep rate, and stress rupture, which in their combined judgment represented values for these properties that could be used by code-writing authorities in establishing safe working stresses. With this work done, it then became the responsibility of the individual code committees to select the factors that should be applied to these physical properties for determining the maximum allowable working stress for the code or code section in question.

Section I of the Code for Pressure Piping deals with power piping, and for this section the following statement has been adopted: "The maximum allowable working stresses shall be established as the lowest of the following stresses: (A) ¼ of the minimum specified tensile strength; (B) ¼ of the tensile strength at temperatures as reported by test data; (C) 62½ percent of the yield strength at temperature as reported by test data; (D) A conservative average of the stress to give a creep rate of 0.01 percent in 1000 hours as reported by test data."

Since a table of stresses computed on the basis given above appeared on page 676 of the August, 1951, issue of *Mechanical Engineering*, it is not being reproduced here.

Sectional Committee B31 has taken action to publish Case No. 7 to make the most recently developed stresses available to manufacturers of pressure piping.

*Inquiry:* In view of the fact that the ASME Boiler Code Committee has adopted new stress values for Section 1 of the ASME Boiler Construction Code some of which are higher than those now permitted in Tables 3 and 3*a*, are these increased stresses permissible under Section 1 of the Code for Pressure Piping?

*Reply:* It is the opinion of the Committee that pending revision of Tables 3 and 3*a*, the revised stresses given in Table P-5, Section 1, of the ASME Boiler Construction Code may be used for piping under Section 1 of the Code for Pressure Piping.

(*continued on page* 63)

# A Basic Standardization Concept

**by Ellsworth F. Seaman**

Electrical Engineer, Bureau of Ships, U. S. Navy

THE "why" of standardization is obviously a matter of economy, whether it be in terms of time, manpower, or money, but the "how" is more obscure since it deals with both technical and administrative techniques. While the major problems encountered in standardization work are administrative in character, it is the purpose here to examine the technical aspect so as to bring into focus the central theme—interchangeability. To achieve a full measure of interchangeability, three conditions must be satisfied where the limits are defined in terms of Dimensions, Function, and Quality. As a triangular concept this would appear:

This concept may seem elementary and self evident. In apology thereof let it be remembered that many standardization agreements are unseasonably delayed by technical proposals too restrictive to be made a part of a practical and usable standard. It is in cases of this kind, when agreement becomes difficult, that a review of the bare essentials required for standardization will permit resolution of many differences. The use of this philosophy as a basic premise may be of some value in orientation of thinking and definition of scope for a fresh undertaking. It was applied in this manner during the 1951 meeting of the International Electrotechnical Commission in Estoril, Portugal. On this occasion Committee TC 15 for Electrical Insulating Materials had as its initial task the definition of scope. The United States proposed the triangular interchangeability concept of standardization as a tool for evaluating the work to be done. This was adopted by the participating nations as a principle to be used for the work of this committee.

*Dimensions* are important to the consumer only insofar as they insure the ready replacement of an existing unit or part with a new unit or part. Mounting dimensions and maximum over-all dimensions therefore require standardization. Shape or configuration are unimportant; manufacturing freedom in this respect promotes availability and allows individual manufacturer appeal to the esthetic sense, while at the same time disproving the oft-repeated criticism that standardization means regimentation. Where standardized dimensions are necessary, it is important that standardization work be started early in the industrial field. If this is not done, the problem of standardization of dimensions can represent the greatest single delaying factor in the work and possibly the most expensive. In the absence of precedents for establishing ranges and sizes, it is necessary to use preferred number systems to the best advantage.

It is essential to the successful application of any product that it *Function* properly in its intended usage. A motor must run at the right speed; an oil or water pump must deliver the proper amount of liquid; a traffic light must be adjustable to the needs of standard timing cycles consistent with the flow of traffic. The functional characteristics should be the least difficult to achieve in the process of standardization, assuming that functional classifications are associated with commonly understood terminology.

The *Quality* aspect of standardization is oftentimes the most difficult phase of the work from the technical standpoint. It is a factor which the small consumer cannot check and for which he must depend on the integrity and guarantees of the producer to insure a fair return on the purchase price. On the other hand the large consumer, such as a public utility company or a Military Department of the United States Government, requires thorough inspection testing for quality level before acceptance. These tests are supplemented frequently by longer life tests to measure quality in terms of ultimate durability under all conditions of usage. The development of accelerated life tests, of weathering tests, corrosion tests, and specialized tests for special application attributes, taxes the technical ingenuity of all concerned.

While what has been said deals with engineering items, the elements of Dimensions, Function, and Quality apply also to administrative policies, procedures, or methods. In the case of a policy, will it *dimensionally* fit the ability of the group concerned with carrying it out; does it take into account all of the background so that it will *quality-wise* be interchangeable with what has gone before; does it properly define all of the *functions* for which it is intended?

This brief discussion has dealt sketchily with some of the more important aspects of Dimensions, Function and Quality. The method of application of this philosophy depends on the specific problem to be solved, and it cannot be emphasized too strongly that any problem solution can be hastened by constant reference to basic guide lines.

NOTE:—*The opinions or assertions contained herein are the private ones of the author and are not to be construed as official or revealing the views of the Navy Department or the naval service at large.*

Dr Wheatley, in television program, points to chart showing accidents lead as cause of children's deaths

National Safety Council

Children often cause their own injuries; good engineering helps protect them

# How SAFE Is Junior?

ACCIDENTS cause more deaths and disabling injuries to children from 1 to 14 years of age than any disease or other cause. This is the reason the American Academy of Pediatrics has asked the American Standards Association to initiate a project to develop safety standards for children's toys, clothing, and furniture. Dr George M. Wheatley, third vice-president of the Metropolitan Life Insurance Company, made these statements when he described the accident problem and some of the ways in which it might be solved at a conference called by ASA December 5 to consider the Academy's request.

As chairman of the Accident Prevention Committee of the American Academy of Pediatrics, Dr Wheatley has been closely in touch with reports on injuries and deaths sent in by the 3,000 specialists in children's diseases who make up the membership of the Academy. Dr Wheatley also presented the story on the Woman's Club television program moderated by Julann Caffrey on station WABD, New York, January 15.

Accidents cause more deaths to children than the next seven leading causes, which include pneumonia, cancer, leukemia, tuberculosis, heart and kidney diseases, and contagious diseases such as poliomyelitis, Dr Wheatley said. In addition, accidents cause untold suffering through disfigurement and mutilation. For every fatal accident, reports show 90 to 100 severe injuries.

Finding that they were treating many more children for injuries than they had some years ago, the doctors made a survey to determine the causes. About 50 percent of the cases reported were due to poisoning. Burns were the next important cause, representing 30 percent of the cases. Flammable clothing, it was found, was the contributory factor in one-half of these burn cases. Strangulation or suffocation, involving harnesses or sleeping garments, ranked high on the list. There were injuries and deaths due to falls from top heavy and badly balanced high chairs; to pointed uprights on children's furniture; lollipops with wooden sticks; car doors that opened suddenly; plastic toys that broke easily; lead poisoning from paint; insecticide poisoning; and to the bars of a child's play pen which caught and held the baby's head.

Some accidents, Dr Wheatley pointed out, are due to the characteristics of children themselves, and their urge to investigate everything within reach. It may be impossible to protect every child from injury due to swallowing insecticides or candy-coated medicine pills. However, the Academy's Accident Prevention Committee believes that there is an engineering job to be done to assure that clothing, furniture, and toys offered on the market are designed and manufactured with safety in mind.

This was the reason back of the Academy's request that the American Standards Association consider organizing a committee to develop

National Safety Council

National Safety Council

**Some accidents are due to children's urge to investigate—Protective coverings for fan blades, well-insulated electric cords, plastic scissors that cut nothing but paper are precautions to cut down accident record**

safety standards for the protection of children. Women's organizations, retail stores, safety organizations, groups working with children, medical groups, and manufacturers of children's equipment were represented at the conference called by ASA December 5, 1951. Dr Ephraim Freedman, R. H. Macy & Co, Inc, Bureau of Standards; Dr Herman E. Hager, General Dyestuff Co for American Association of Textile Chemists and Colorists; Dr Irwin Kerlan Federal Food and Drug Administration joined Dr Wheatley in presenting the story as they have experienced it.

As a result of that meeting, a Special Committee was organized to carry forward the work of the conference in determining the need for safety standards in seven specific fields and to make recommendations to the conference. Dr Wheatley is chairman of this special study committee. The following questions on problems that might lend themselves to standardization are being studied.

(1) Flammability of textiles for children's clothing—What specifications and tests of flammability can be adopted with respect to textiles used in the manufacture of clothes for children?

(2) "Safe" labeling of coatings and coated materials for children's toys and furniture—In what way can paints and other coating materials be labeled to discourage the misuse of toxic substances in the coating or re-coating of furniture and toys used by children?

(3) Harnesses and sleeping garments—What standards can be developed regarding the design and manufacture of restraining devices and sleeping garments to prevent possible strangulation or suffocation?

(4) Wooden furniture for children

(5) Baby carriages and strollers

(6) Wheeled toys

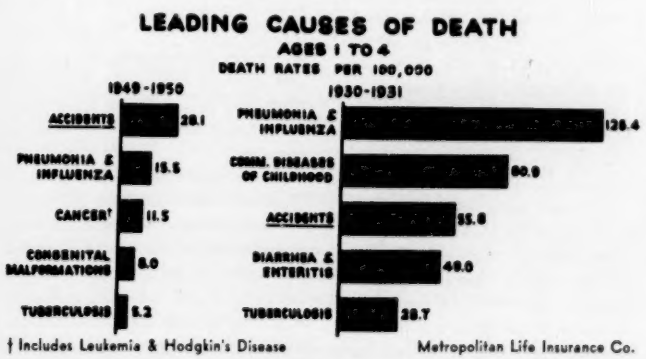
(7) Other toys—What standards can be developed regarding the design and manufacture of items 4 to 7 to minimize the possibility of injury resulting from their use?

It was also the opinion of the conference that further study should be given to the subject of poisoning of children in order to determine what phases might be suitable for standardization.

This list has been submitted to the organizations concerned with the problem. They are being asked whether they would be interested in cooperating on a committee under ASA procedure to develop safety standards on any of these subjects.

In discussing the problem on the television program, Dr Wheatley declared that the representatives of medical groups, technical societies, trade associations, and government departments interested in this project

(*continued on page* 63)




† Includes Leukemia & Hodgkin's Disease

Metropolitan Life Insurance Co.

**This is the chart to which Dr Wheatley is pointing, above. Improvement in mortality rate in 20 years reflects better health programs, development of new drugs. Standards to prevent accidents are next step in safety program.**

# "Face-Lifting" for Machine Tools

by

**J. M. P. Fox**

Executive Vice-President and Secretary, American Rebuilders Association, Inc

Mr Fox is a civil engineer with wide experience both abroad and in the United States in manufacturing and industrial management. He was formerly executive director of the Machinery Dealers' National Association.

Officers of the American Rebuilders Association are: George R. Shuman of George R. Shuman Company, Detroit, president; H. Q. Griffith, Belyea & Company, Jersey City, N. J., vice-president; Lewis M. Lucas of J. L. Lucas & Company, Bridgeport, Conn., treasurer; and J. M. P. Fox, executive vice-president and secretary. Mr Shuman is also chairman of the Association's Standards Committee.

THE American Rebuilders Association, Inc, was incorporated recently to alleviate the "bottleneck" existing in the Defense Production program and, at the same time, to gain recognition for the legitimate rebuilder of industrial machinery and equipment. The fact that standards, or any degree of uniformity, had never been established in the rebuilding industry brought about the necessary affiliation of the new association with the internationally known and respected American Standards Association.

Contrary to some public opinion, rebuilders are perhaps the most highly skilled mechanics available. The misconception that dealers of rebuilt machinery were "glorified junkmen" passed out of the minds of production chiefs shortly after World War I. It was also at this time that we witnessed an influx of precision tool and die workers, artisans and craftsmen in machinery, electronics, technicians, and pattern makers with "know-how" and vision from continental Europe. Along with our own trained mechanics who were ambitious enough to leave the top scale shop and production jobs, these individuals commenced the rebuilding of machinery and equipment here.

As can readily be understood, every known contingency has had to be considered in this rebuilding. In many instances new machines, generators, or pieces of equipment have been redesigned and rebuilt to new specifications. In other instances, ways, arms, or bed plates have been lengthened or shortened to change capacities. The "know-how" of the rebuilder to standards is manifold and his accuracy unquestioned.

Only recently, according to an article in a Washington newspaper, Charles E. Wilson, Director of the Office of Defense Mobilization, referred to a manufacturer who had ordered 400 new machine tools and who was informed that if he were to wait for these machines to be built it would put him 17 months behind schedule. This manufacturer restudied his requirements and, by using relatively simple tools which were available, he eliminated the need for many complex machines and brought the needed total down to 60. Quoting Mr Wilson: "As was shown in World War II, there is no limit to the extent that American industry can improvise to find ways out of what might look like hopeless situations."

This shows what "know-how" has to do with production, especially when our nation is sorely pressed for accomplishment. Going back to the last war, as far as machine tools and machinery is concerned this nation was not in the position it is in today. Prior to World War II industry had been depressed and there were not many good machines available. Those which were available had been recovered from the scrap piles and rebuilt in the shortest possible time to get war plants into production. Industries producing implements of war were able by improvisation to turn out the needed equipment.

Of course, when we were in the war—and even when we were about to enter into a state of war—there was general enthusiasm for the production of war materials. This resulted in the nation's production going forward to a rate that surpassed even the most optimistic expectations and hopes.

Second-hand and rebuilt machines contributed a very great deal towards the accomplishment of these unparalleled results—and held the production lines intact until the new manufacturers were able to produce. In addition to this, we shipped untold thousands of rebuilt and used machines to the European nations—lending them a hand to help win the war.

Despite the relative indifference of the public at large, we are now in a predicament quite similar to that of early 1941—one which could readily lead to another open state of war. The aim is to get our defense effort under way in the shortest possible time, and every available machine should be put into service as quickly as possible.

It is most fortunate that the nation has today untold thousands of machines in the hands of government, stand-by plants, and dealers. At the same time a "bottleneck" exists in production due to a lack of machinery and equipment. Manufacturers, in setting up production lines cannot and will not undertake to employ machinery or equipment upon which they cannot depend for precision or accuracy.

Of the some three to four thousand dealers in used machinery and equipment, only about 2 percent are using standards as a basis for their rebuilding methods. It is to represent this minority group, which is endeavoring in every possible manner to assist in the defense of our nation, that the American Rebuilders Association, Inc, was formed. This group,

(*continued on page* 63)

# ASA Awards

**The policy and procedure of the American Standards Association in awarding The Howard Coonley Medal and The Standards Medal, approved by ASA's Board of Directors at its meeting January 8, 1952.**

IN 1950 through the support of certain industrial organizations the Board of Directors established a gold medal for annual award to an executive who by his practice and preachments had furthered the national economy through voluntary standardization. The award was named The Howard Coonley Medal in honor of Mr Coonley, who had served for 22 years on the Board of Directors, including three terms as President and four years as Chairman of the Executive Committee, and whose leadership is recognized both nationally and internationally.

In 1951, using Association funds, the Board on recommendation of the Executive Committee established a second gold medal to be awarded annually to an individual who had shown leadership in the development and application of voluntary standards. The award was designated The Standards Medal.

Recommendations to the Board of Directors for the award of The Howard Coonley Medal were made by a committee of three business executives. The individuals comprising the committee were suggested respectively by the American Society of Mechanical Engineers, the American Management Association, and the National Industrial Conference Board upon request to those organizations for names of executives of wide acquaintance and broad experience.

The first award of The Standards Medal was recommended by the Executive Committee, but in establishing the medal provision was made for an Award Committee, consisting of one member each from the Board of Directors, the Standards Council, and the Company Member Conference of the American Standards Association.

From time to time the ASA, on authorization by the Board, has presented scrolls to individuals who have made particularly significant contributions to the standardization movement or to the work of the Association. Further, the ASA has followed a policy adopted by the Board in 1949 of presenting certificates to new members of the Board and the Standards Council upon the completion of one year's service as such.

Howard Coonley Medal

The Standards Medal

## Your Nomination is Invited

**In accordance with the policy and procedures adopted by the Board of Directors at its meeting on January 8, 1952, all Members of the American Standards Association are invited to send their nominations for 1952 recipients of the Howard Coonley Medal and the Standards Medal to the Managing Director of the American Standards Association.**

**The Howard Coonley Medal is for award to an executive who by his practice and preachments has furthered the national economy through voluntary standardization.**

**The Standards Medal is for award to an individual who has shown leadership in the development and application of voluntary standards.**

**Nominations for awards shall set forth clearly and in detail particular accomplishments or actions which are considered to justify the award proposed. They shall be submitted in triplicate on plain paper without indication as to the source of the nomination. Each such nomination must be accompanied by a letter of transmittal.**

**Nominations must be received at the headquarters of the American Standards Association not later than July 1, 1952.**

**Should there by any questions as to the nominating procedure, the Managing Director will be glad to receive them.**

### Policy

The Board of Directors hereby reaffirms the policy of annual presentations of The Howard Coonley Medal and The Standards Medal on the bases set forth at the time of their establishment. The Board reserves the right to establish additional medals when and if the situation so indicates.

The Board reserves the right to authorize the presentation of certificates to individuals from time to time without prejudice to higher awards when particular circumstances indicate the desirability of such cer-

(*continued on page* 62)

# "Solution of a Recurring Problem" on Tools

SPEAKING at the Standards Meeting of the American Society of Tool Engineers' Detroit Chapter, September 20, Vice Admiral G. F. Hussey, Jr, USN (Ret), managing director of the American Standards Association, drew on the experience of one company which developed a standards program as a means of solving the problem of excessive breakage and high cost of extrusion dies.

Members of the tool engineers' panel to discuss standards with Admiral Hussey were Robert Mitchel, General Motors Corporation; Don Morrell, Ford Motor Company, and A. E. Chilcott, Chrysler Corporation.

Admiral Hussey told the story as follows:

The materials part of this company's program began when a committee was set up to investigate excessive breakage and high cost of extrusion dies. Right there is a very significant aspect—they were looking for a solution to a recurring problem, and they were not consciously seeking to create any standards. The original program has spread out in many directions, but only as it was clear that real savings could result. That the means evolved into a series of materials standards is an excellent demonstration of the value of standards.

The initial study indicated that tool steels were being purchased by one plant from a number of different sources, piling up to some 60 tool steels, to which had to be added another fifteen or so employed in other parts of the tool and die assembly. Here, then, were some 75 brands in use. Lest I be misunderstood as attacking brand names as such, let me hasten to say that there is nothing incompatible between minium performance standards and the most ardently supported brand names. Any branded product can be identified with the standard which it meets or surpasses, thus assuring the purchaser of adequate material with multiple sources of supply.

A study of the chemical analyses of these 75 brands of tool steel brought them into 12 positive type classifications. Examination of the results obtained with the tools indicated that two types were most effective for dies, another for back-up pieces, and a fourth for die blocks. With the field thus narrowed a detailed study of the characteristics of each of these four was undertaken. In a few years all but one of the materials had been eliminated until a single tool steel type was meeting all requirements for extrusion dies and support tools. In the process, experimentation permitted the modification of this type toward a lower alloy content—each change resulting in lower costs or improved performance. Parenthetically, this work is today of inestimable value in the face of shortages of alloying elements and the necessity for materials conservation.

The early indications were so promising that a Tool Steel Committee was established to consider the entire field, within the company, for identification and for selection of the one or two types best suited for each application. Out of the activity of this committee evolved 10 standard types and 6 special types approved for peculiar cases. It was found that the 16 types could be obtained from about 15 different producers and a number of approved warehouses. The company has found beyond question that these 16 types provide more reliable production results at substantially lower costs than the multitude of kinds used before the study began.

The Type Numbering System for tool steels allows positive identification of every brand of tool steel on the market for which an analysis is published or can be obtained. It is an old story to you that the trade offers some 1500 brands of tool steels. These, this company classified into 200 types—an important simplification step, and then, from the 200, selected 16 types as Standard for the company's purposes.

These simplification and standardization steps having been taken, the company initiated a further program of observation. It is nothing more nor less than a continuing periodic review of the simplification steps and the standards established to insure that they are still valid or if they are not, to revise them in accordance with new developments or new materials. This step is analogous to the provision in the ASA procedures for the review of all standards once in three years with a requirement that they be either reaffirmed as still valid or revised to bring them up to date.

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# The Use of a Standard for Proving Commitment of a Fraud

**Translation of an article from *Bulletin Mensuel De La Normalisation Francaise*, official publication of the Association Française de Normalisation, No. 8, October, 1951.**

OUR attention has been attracted to a judgment handed down on September 26, 1950, by the Magistrate Court of the Department of Seine against a Mr G.

So far as we know, this judgment is the first one in which commitment of a fraud has been proven on the basis of a French standard. From this viewpoint it acquires certain impor-

tance and we, therefore, bring it to the attention of our readers together with our comments upon it. However, since the judgment itself did not mention the standard directly, we believe it is necessary here to bring out certain facts.

Mr G was sued because of a misrepresentation of quality in violation of Article 1 of the law of August 1, 1905, when he sold some coal under the grade name "French Anthracite."

In the absence of any administrative regulation based on Article 11 of the law of August 1, 1905, the court must find the elements committed fraud in respect to fair commercial and industrial practices which are well known and in current use. Mr G, in his own defense, was able to refer to certain old practices, the existence of which, incidentally, the court did not contest, and which could have exonerated him. Nevertheless, specimens of coal were sent for analysis to the municipal laboratory which found that the coal specimens submitted had no right to be called "anthracite" as this term is defined in French Standard NF M 10-001 approved by the Ministerial Decree of June 3, 1948. Here is, however, the conclusion of the report of the municipal laboratory:

"The combustible whose index of volatile substances in relation to pure combustible is equal to 12.00 has no right to be called 'anthracite', which name is reserved to combustibles with a maximum Index 8, according to the standard NF M 10-001 approved by the Ministerial Decree of June 3, 1948. The combustible in question must be placed in the class of 'soft' or '¼ hard' combustibles."

The court put aside the excuse offered by the defendant who referred to an existing commercial practice and fined him 700 francs on the basis of Article 1 of the law of August 1, 1905. The court's opinion was that the conclusion of the municipal laboratory (quality of the product does not correspond to the standard) was sufficient to prove commitment of a fraud.

This is the first case wherein a court was obliged to examine the nature of the accusation not by comparison with a recognized commercial practice, as had been done since 1928, but by comparison with an approved standard, the use of which had not been made obligatory by any act of law. The court, in order to establish authoritatively whether a fraud had been committed or not, gave preference to an approved standard and not to the existing commercial practice.

It is interesting to point out that there exists no document relative to standardization which states that a fraud is automatically committed as soon as a product is sold under a name not in conformity with the standard.

This is not a casual omission, because AFNOR, in accordance with the Services of Suppression of Frauds, believes that strict legislation on such a delicate subject would go beyond the intended purpose. Under the existing circumstances it seems to be wiser to leave to the court the exercise of its power of discretion. It is, however, very desirable that it should deal harshly when, as often happens, certain terms are used abusively; for instance, crystal, minium, anthracite, etc; or in the case of such misleading names as semi-crystal, minium of iron, French anthracite, etc. . . .

Standards, issued after a thorough study under a strict procedure, accepted both by professional circles and by users, published and disseminated under the supervision of Public Authorities, give to the courts a sure means of checking on this abusive use of terms.

This is why the verdict by the Magistrate Court of the Department of Seine on September 26, 1950, in the case of Mr G, seems to be a starting point of a new jurisprudence.

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# The Man Who Made Standard Time

SOME of the facts set forth in the feature, "The Man Who Made Standard Time," (STDZN, Sept '51 p 290), "presented a rather distorted picture of this important time reform," writes J. H. Aydelott, vice-president of the Association of American Railroads.

"There is no doubt that Professor Charles F. Dowd deserves a share of the credit for developing the standard time system," Mr Aydelott declares, but, he says, "it is not true that this was a one-man crusade as the article would seem to imply." Mr. Aydelott takes issue particularly with the article's comment that "it took Dowd 20 years to win them (the railroads) over."

The statement that "in the end it was the demand of an exasperated public that turned the trick" is not supported by the facts, Mr Aydelott declares. "If anything, it was the other way around: the public had to be sold on standard time by the railroads," he says.

(*continued on page* 62)

# Light for Learning

**STANDARDIZATION is indebted to *Electrical West's* recent article, "City-Wide School Modernization," for the report of this California program for better school lighting.**

HOW long does it take to bring results in a school lighting program? Three years of groundwork in an industry effort to stimulate better school lighting in northern California were required before a major development was achieved. Last November, the Board of Governors of the Vallejo Unified School District voted approval of a master plan for modernization of 334 classrooms in 18 elementary and high schools of the district. The board authorized the superintendent of schools to proceed with execution of the master plan. It also directed that plans for future school construction shall be reviewed by lighting engineers to insure adequacy of provisions for illumination.

One aspect of the need for a higher level of artificial light was pointed out by Dr Charles Bursch, chief of the Division of School House Planning of the State Department of Education, when he reported results of a survey of elementary schools as follows: "In connection with the natural lighting of schools, the survey found 34 percent of the classrooms having window area less than 1/6 the floor area, and an additional 24 percent of the rooms with window space less than 1/5 of the floor area. Good practice today provides the equivalent of 40 percent of the floor area in glass." Relighting to specifications of the American Standard Practice for School Lighting offers the means providing these older classrooms with good illumination, reports of the program stated.

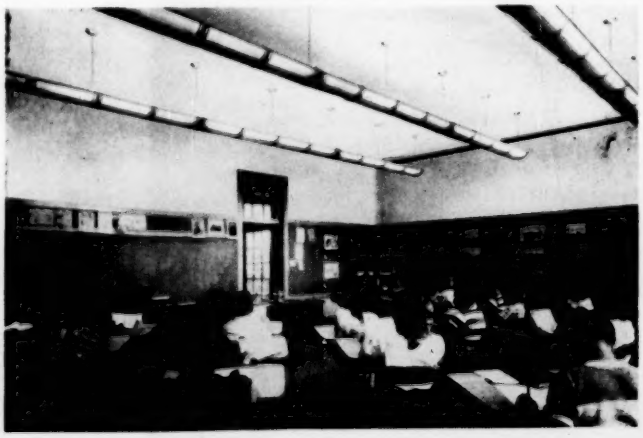
Two sources of lighting have been used in this project. In the elementary schools, incandescent fixtures were installed to provide 30 footcandles of light at the desk level. In the high school classrooms, fluorescent fixtures were used to produce 50 f-c of light, as the heat generated by incandescent fixtures at 50 f-c would be excessive. It was recognized also that the greater night time use of high school classrooms for adult education and student extracurricular activities provides more opportunity to amortize the higher cost of fluorescent fixtures.

This latter level of 50 f-c of light for the high school classrooms was recommended in the master plan because eyes need more assistance in seeing as people grow older, and in-

(*continued on page 62*)

**Modernization of a demonstration classroom touched off the decision to relight all schools of the Vallejo Unified School District to meet the requirements of the American Standard Practice for School Lighting. Top picture shows well-lighted classroom after modernization. Below, the same classroom before renovation. Brightness figures show poor light distribution here.**

**Below, a remodeled classroom at the Curry School, the first school in northern California to have every classroom brought up to the minimum lighting standards.**



# What's New on American Standard Projects

**Building Code Requirements and Good Practice Recommendations for Masonry, A41—**

*Sponsor: National Bureau of Standards, U. S. Department of Commerce*

A second draft of a proposed revision of the 1944 edition of this American Standard has been circulated to the sectional committee. Action of the committee is expected to be completed within the next three months.

**Building Code Requirements for Minimum Design Loads in Buildings, A58—**

*Sponsor: National Bureau of Standards, U. S. Department of Commerce*

A proposed revision of the 1945 edition of this American Standard has been circulated for review and comment by the sectional committee.

**Signs and Outdoor Display Structures, A60—**

*Sponsors: American Municipal Association; Outdoor Advertising Association of America*

This sectional committee is to be reorganized as a preliminary step to a review of American Standard A60.1-1949. The review is being undertaken on recommendation of the Building Code and Construction Standards Correlating Committee to determine whether the 1949 edition of the standard should be reaffirmed or revised. Additional organizations are being invited to name representatives.

**Application of Gypsum Wallboard A97—**

*Sponsors: American Institute of Architects; Gypsum Association.*

The scope of this new project has been approved as: "Methods of applying gypsum wallboard."

It is expected that the Gypsum Association will have recommendations available for consideration at the organization meeting of the sectional committee. This meeting is scheduled to be held in Washington in April.

**Small Tools and Machine Tool Elements, B5—**

*Sponsors: Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builder's Association; The American Society of Mechanical Engineers*

A Proposed American Standard, Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools has been circulated to Sectional Committee B5 for letter ballot vote, the American Society of Mechanical Engineers announces. In preparing the draft, the committee has worked in cooperation with the National Electrical Manufacturers Association on questions where motor mounting dimensions were concerned. The proposed standard covers mountings both for the type of pump that is attached directly to the machine tools and also the type of pump attached to motors which, in turn, are attached to the machine tools. "Every attention has been given to establish dimensions that encourage improvement and further development in both pumps and motors," the Foreword to the proposal declares.

**Ball and Roller Bearings, B3—**

*Sponsor: Mechanical Standards Committee*

The scope of this project has been enlarged to cover "material specifications for components of ball and roller bearings and for mounting accessories," as well as terminology, definition, and dimensions.

**Classification and Designation of Surface Qualities, B46—**

*Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers*

Ernest J. Abbott, chairman of this sectional committee, has formally transmitted the committee's recommendation that steps be taken to unify the surface finish standards of Great Britain, Canada, and the United States. The committee voted to make the recommendation at an informal conference with British representatives last summer. The recommendation was sent to the British Standards Institution, the Canadian Standards Association, and the American Standards Association.

**Building Code and Construction Standard Correlating Committee**

The committee has re-elected Theodore Irving Coe, Technical Secretary of the American Institute of Architects, as chairman. Morgan Strong, Executive Secretary of the NY State Conference of Mayors and other Municipal Officials, representing the American Municipal Association, has been re-elected vice-chairman.

**Identification System for Anti-Friction Bearings, B54—**

*Sponsor: Mechanical Standards Committee*

Since the standards being developed by this committee use letters as well as numbers for the identification of ball and roller bearings, the Mechanical Standards Committee has voted to change the title of this committee from "Numbering System for Anti-Friction Bearings" to "Identification System for Anti-Friction Bearings."

A subcommittee on international cooperation is now being reorganized and several proposals discussed in meetings of the International Organization for Standardization Committee TC 4 will be referred to it for consideration.

**National Electrical Code, C1—**

*Sponsor: National Fire Protection Association*

The seventh edition of Abbott's *National Electrical Code Handbook* is being published by McGraw-Hill Book Company this month. The Handbook is intended to help electricians, contractors, inspectors, and engineers by means of a systematic rearrangement of Code material, plus detailed explanations of special prob-

lems and their applications. Illustrations of the latest equipment in commercial use are included. The author, Arthur L. Abbott, is staff engineer on standards work for the National Electrical Manufacturers Association. He is well known in the electrical industry, having served for more than 25 years in electrical contracting work and having, for a time, served as Technical Director of the National Electrical Contractors Association.

The price of Abbott's *National Electrical Code Handbook*, seventh edition, is $6.00. Further details can be obtained from McGraw-Hill's Book Information Service, 327 W. 41st Street, New York 18, N. Y.

The National Electrical Code, C1-1951, is an approved American Standard.

### Photographic Processing, PH4—

*Sponsor: Photographic Standards (Correlating) Committee*

The editor of one of the important photography magazines has informally urged the development of a standard testing method for evaluating the speed and graininess characteristics of developers for negative films. "Both sensitometric and practical data based on 'normal' developing time and 'prolonged' developments for maximum effective emulsion speed are needed," he explains. This information is needed because some developer manufacturers claim that their products will increase film speed by "so many times" or by "such a percentage," he declares. "Unless this claim can be separated from the normal exposure latitude of the film developed, there is no way in which the matter can be properly identified and controlled," he says.

This question is being given active consideration by the Sectional Committee on Photographic Processing.

### Chemical Industry Correlating Committee—

J. G. Henderson, Carbide and Carbon Chemical Company, has been re-elected chairman for 1952 with J. C. Lawrence, Division Engineer, duPont de Nemours and Company, as vice-chairman. Mr Henderson represents the Manufacturing Chemists Association and Mr Lawrence represents the American Institute of Chemical Engineers.

Reuel C. Stratton, Supervising Chemical Engineer, Engineer and Loss Control Division, Travelers Insurance Company, was welcomed at the last meeting of the committee as a new member representing the Association of Casualty and Surety Companies.

*Stainless Steel Analyses*—A subcommittee is making a survey of users of stainless steels to determine whether they are satisfied with existing standard analyses. Although the majority of those replying use and want more restrictive analyses, almost one-third took no exception to the standard analyses, the subcommittee reported. Correlation of the replies is being completed.

*Valves and Fittings for Fluids in Chemical Industry Process Lines*—A subcommittee has been organized with the approved scope: "To establish general requirements for the specific, detailed, dimensional design of valves and fittings for the chemical industry for the safe and proper handling of highly toxic fluids in chemical process pipe lines."

To date the subcommittee's tentative findings are:

For services up to and including 300 psig, use American Standard Raised Face Flanges, Series 30.

For services over 300 to 6,000 psig, use ring-type joints. The subcommittee recommends, however, that the ASA committee be requested to establish a higher rated flange to handle 6,000 psig pressures at temperatures in excess of 100 (not presently provided for by 2500 lb flanges).

Further study was given lens-type joints and use of flanges of non-critical materials at a meeting of the subcommittee January 15. (This will be reported next month.)

The chairman of the Sectional Committee on the Code for Pressure Piping, B31, has indicated that he will welcome close cooperation of the Chemical Industry Correlating Committee in the Code work.

### Mining Standardization Correlating Committee—

Maurice D. Cooper, director of Mining Engineering Education, National Coal Association, has been elected chairman of the committee for 1952. H. H. Otto, Hudson Coal Company, Scranton, Pa., is the new vice-chairman.

M. D. Cooper

For many years, Mr Cooper has taken a leading part in the development of safety standards for conditions and equipment in coal and metal mines. During his career he has worked in engineering and operating capacities for the Ellsworth Collieries Company, the Ford Collieries Company, and the Hillman Coal and Coke Company.

Mr Cooper, who has served as vice-chairman of the committee for the past seven years, succeeds Lucien Eaton, Consulting Engineer, as chairman.

### Electrical Standards Committee—

The committee has re-elected its officers for the coming year. Charles Rufus Harte remains as chairman of the entire committee: Dr W. R. G. Baker, vice-president in charge of the electronics division, General Electric Company, Syracuse, N. Y., is vice-chairman and chairman of the Communications and Electronics Division. In addition to his work with G-E, Dr Baker is director of engineering, Radio-Television Manufacturers As-

sociation. P. H. Chase, chief engineer of the Philadelphia Electric Company, is the other ESC vice-chairman, and is chairman of the Power Division.

The ESC Executive Committee consists of the officers, and the following members: M. M. Brandon, vice-president, Underwriters' Laboratories (Fire Protection Group); L. G. Cumming, technical secretary, Institute of Radio Engineers (IRE); H. R. Huntley, transmission engineer, American Telephone and Telegraph Company (Telephone Group); E. B. Paxton, General Electric Standards Division (AIEE); R. C. Sogge, Manager, Standards Division, General Electric Company (NEMA); Lt Col T. J. Ice, USAF, director, Armed Services Electro Standards Agency.

### Insulators for Electric Power Lines, C29—

*Sponsor: Electrical Standards Committee*

R. M. Havourd, Public Service Electric and Gas Company, Newark, N. J., has been named chairman of Sectional Committee C29.

### Transformers, Regulators, and Reactors, C57—

*Sponsor: Electrical Standards Committee*

J. H. Chiles, Westinghouse Electric Corporation, has been named vice-chairman of this sectional committee.

### Commercial Arbitration—

*Project requested by the American Arbitration Association*

A survey on the proposed standards submitted for American Standards Association approval by the American Arbitration Association is bringing in many replies, so far overwhelmingly in favor of the standards. The request for comments went to all Member-Bodies and Association Members of the American Standards Association as well as to a list of trade associations, 600 in all. Some of the associations explain that they are following government rules that require the use of their own arbitration procedures; some have made their approval contingent on acceptance of proposed changes.

### Drawing and Drafting Practice, Y14—

*Sponsors: American Society of Mechanical Engineers; American Society of Engineering Education*

A tentative draft of a Proposed American Standard for Pictorial Drawing was circulated for comment early in December to a selected list of individuals. The suggestions received will form the basis for a redraft to be submitted to the sectional committee. The comment period closes on March 7, 1952.

A French proposal for international standardization of methods of representing surface roughness on drawings has been circulated to the sponsors and the officers of Committee Y14. In discussing the problem, the French proposal comments: "A real world standard must be of an extremely general character, independent from the measuring methods used and from the time and place where it was done. This standard must only fix the geometrical limits of roughness within the 'roughness tolerances' . . . It must give full freedom in choosing the method of measurement or the method of verification of those limits."

### Standardization in the Field of Statistics, Y15—

*Sponsor: American Society of Mechanical Engineers*

Permission has been given the German national standards association, Deutscher Normenauschuss, to translate American Standards Z15.2-1938, Time-Series Charts, and Z15.3-1943, Engineering and Scientific Graphs for Publications. In granting permission to reprint, the sponsor called attention to the fact that a revision of these standards is now under way.

### Motion Pictures, Z22—

*Sponsor: Society of Motion Picture and Television Engineers*

Only about half the indoor theatres and two-thirds the review room projectors studied by the Screen Brightness Committee of the Society of Motion Picture and Television Engineers produced screen brightnesses within the range specified by American Standard Z22.39-1944. The remainder ranged from extremely low to excessive high, reports W. W. Lozier, chairman of the Screen Brightness Committee. Screen reflectivity varied from values typical of screens in good condition down to 50 percent deterioration. The Screen Brightness Committee is working on recommendations for improvement of screen illumination.

### Safety Glass, Z26—

*Sponsors: National Bureau of Standards, U. S. Department of Commerce; Association of Casualty and Surety Companies, Accident Prevention Department*

Robert H. Harleston, Jr, Traffic Engineer, Accident Prevention Department, Association of Casualty and Surety Companies, New York, has just been named secretary of the sectional committee on specifications and methods of test for safety glass. Harold F. Hammon, Assistant Engineer, Transportation Department, U. S. Chamber of Commerce, Washington, D. C., continues as chairman.

### Industrial Sanitation, Z4—

*Sponsor: Federal Security Agency, U. S. Public Health Service*

The first draft of a proposed revision of the American Standard Safety Code for Industrial Sanitation in Manufacturing Establishments, Z4.1-1935 has been circulated to the sectional committee. The proposal includes expansion of the standard to apply to office buildings, mercantile establishments, and other places of permanent employment, in addition to manufacturing establishments.

Work is also going forward on revisions of the American Standard Specifications for Drinking Fountains, Z4.2-1942 and Sanitary Privy, Z4.3-1935. A new subcommittee was organized recently to study the possibility of preparing standards on sanitary requirements for construction operations and temporary labor camps.

# Recent Rulings on Unusual Accidents

The following interpretations have been handed down by the Committee of Judges of ASA Sectional Committee Z16 on accident statistics. They serve as a guide to companies who want to know how to count injuries due to unusual accidents in their safety record.

The American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, offers generally accepted rules for keeping track of a company's safety record. Monthly compilation of a company's accident toll shows at a glance when some change in operations or some unforeseen new hazard has caused a jump in the injury rate. Immediate action then can be taken to eliminate the hazard.

Safety engineers are invited to obtain interpretations of the standard by sending the facts on doubtful cases to the American Standards Association. Reprints of all the published decisions can be obtained from ASA.

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CASE 140. A carpenter sustained a sprain of the right knee when he fell into an excavation in the dark, outside the building in which he was working. Investigation shows that the excavation in question was so located that it could not be reached by pedestrians except by going out a certain door of this building, which was under construction. All personnel in the building were aware of the excavation and, because of the dead-end feature of its location, they had no occasion to use this door. The excavation was otherwise isolated by adjacent banks and roads on higher levels, and for practical purposes would not have required any barricade or warning signs.

The injured described his accident as follows: "I went out in the dark and was walking and fell in a dug hole." Subsequent interviews with the man showed that in violation of project sanitary rules, he went out the door described for purpose of urinating in the dirt in or around the excavation itself. By some inadvertency he fell, spraining the knee.

It is noteworthy that on this project sanitary requirements are high, and that throughout the construction area especially designed privies featuring chemically-treated removable tanks are placed. Workers are required to use these facilities, and there is evidence to show that no other practice is followed by the rank-and-file of employees. In the past several years this is the first violation which has been brought to the attention of the company.

It was thought, therefore, that the injured, by his overt act and disregard of existing regulations, took himself outside his employment, and that the resulting injury should not be charged against the record.

Although the committee agreed that this employee had violated the rules, they did not believe that the Z16.1 standard recognizes omission of any injury because of this fact. They, therefore, decided that this case should be counted.

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CASE 141. An employee was drying his body after taking a shower before he went home from work. This occurred about 6:00 A.M. in the morning as he was working on a shift that started at 5:30 the previous evening and on which he worked considerable overtime, to about 5:30 that morning.

In the process of drying his body he tore a scab off a sore on a varicose vein on his leg. This bled quite severely and he was taken to the hospital. There they stopped the bleeding but he was advised to stay off work for a few days and it may be necessary to surgically repair these veins before he is completely cured.

The company asked for an opinion on the chargeability of this case.

The committee discussed at some length whether or not this injury did arise out of the employee's work, since his work required him to take a shower at the end of the shift, but they finally agreed that this injury had not arisen out of the employment and that this case should not be counted in the rates.

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CASE 142. A large plant owned property on the south side of "O" Street. Approximately 50 ft south of "O" Street a railroad right-of-way crossed the plant property, parallel to "O" Street. The company used the property between the railroad right-of-way and "O" Street as a company parking lot. The parking lot was completely fenced. At one end of the parking lot there was a pedestrian entrance which was separated from the parking lot and fenced on both sides. There was a police shelter guarding this entrance way at "O" Street. The fences terminated at the railroad and from the end of the fences the passageway was indicated by white lines painted on the pavement as it crossed the railroad tracks. All plant operations and buildings were south of the railroad track.

It was dark and raining very hard at 6 A.M. A steam locomotive with no cars attached was backing toward the west on this track. It was proceeding at a very slow speed with a headlight turned on and the bell ringing as it approached the pedestrian's crossing.

The employee, on his way to work, entered the pedestrian entranceway from "O" Street and walked toward the south with his head down to shield his face from the rain. He walked into the path of the engine and was struck by the northwest corner of the tender. The employee was dragged 88 feet by the engine and received injuries which resulted in his death shortly thereafter. Another employee, about 8 or 10 ft behind the injured man, was an eye witness to the accident.

The railroad employees on the engine claimed that they did not see this injured employee until after the accident. The company reported that it had requested the railroad to flag this crossing but the railroad had not done so. The company believed that this injury should not be counted, first, because the pedestrian's entrance north of the railroad was adjacent to a parking lot and the Z16.1 standard specifically excludes injuries on company parking lots. Furthermore, they did not believe that this employee should be considered as entering upon his employment until after he had crossed the railroad right-of-way and entered upon the company property which was used for production purposes.

The committee agreed that this was a borderline case, but concluded that it should be counted in the rates. In discussing the case the committee came to the conclusion that the employee entered the company property at the pedestrian gate and police shelter at "O" Street. This employee walked across company property between two fences that marked off the pedestrian entrance to this plant. He then crossed the railroad right-of-way in order to get to other property of the company.

This case apparently hinges primarily on whether or not the injury arose out of and in the course of employment. In many other cases the committee has decided that an employee entered upon his employment when he passed through the company gate and entered the company property. In line with that conclusion, the committee agreed that this employee entered his employment when he entered the gate at "O" Street. The committee did not believe that the fact that this employee had to cross a railroad right-of-way after entering upon his employment in any way affected his employment or in any way took him out of his employment, since it was apparently necessary for this employee to cross the railroad right-of-way in order to reach the location where he regularly worked.

The report mentioned a parking lot adjacent to the pedestrian entrance. Since this parking lot was separated from the pedestrian entrance by a fence, the committee did not believe that any rulings concerning parking lots were pertinent to this situation.

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CASE 143. This is another case of a large plant with a fence and a railroad right-of-way on plant property inside the fence and parallel to it. Here, again, a pedestrian entrance way crossed the railroad tracks and a gatehouse and watchman were located at the fence, which was also the limit of the plant property. Here, again, it was raining at 4:15 P.M. when two employees left the plant at the end of their shift to go home. As these two employees crossed the plant property they noticed that a railroad train was approaching the

crossing, so they hurried in order to avoid standing in the rain while the train of cars passed.

Both of these employees crossed the tracks, and went out through the gatehouse. When they were 25 or 30 ft beyond the plant property one of them suddenly stated that he had forgotten his lunch pail. He spun around and ran through the gatehouse back toward the plant. The other employee called a warning to watch out for the train. The engine was a Diesel locomotive; the exhaust made considerable noise; and the engine bell was ringing. After the train had passed, the employee's body was found 150 ft up the railroad track. He had died instantly. Neither the train crew nor the employee on duty at the gatehouse saw what happened. The company fence was of link mesh and the train had, therefore, been clearly visible even from the outside of the fence. The company questioned as to whether this injury should be included in the rates.

The committee decided that this injury should not be included in the industrial injury rates.

In commenting on this decision, the members remarked that when the employee went out of the plant gate he completed his work for the company for that day. His return through the gate and into the plant, in order to get his lunch pail, was entirely for his own convenience and this could not be construed as undertaken in the interests of the employer. The committee therefore agreed that this action on the employee's part did not constitute an act arising out of and in the course of his employment.

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CASE 144. A company asked if 3.6.1 of the code applied to a certain case. This section reads: "Illness resulting solely from antitoxin, vaccines, or drugs used in the treatment of a nondisabling injury shall not cause the injury to be classified as disabling."

The incident began when a metal stacker dislocated his right shoulder in the course of his work. He reported to the Dispensary and was sent from there to the County Hospital by ambulance to have the shoulder reduced by a doctor. On arrival he was asked by the doctor whether he had had anything alcoholic to drink in the past 24 hours. When the patient replied that he had not, the doctor administered just enough chloroform to make him groggy so that reducing the dislocated shoulder to normal would not be painful. After this was done the patient began to breathe very rapidly, raised up on the table slightly, and fell back dead.

An autopsy was performed the following day and the report indicated that the deceased died of myocardial failure due to the administration of the anesthesia.

The committee decided that this case should be included in the industrial injury rates as a fatality. The members of the committee commented that the hazards of the operating table are legitimate hazards associated with the treatment of such an injury. They did not believe that the Z16 committee had intended to include the effects from anesthesia in the provisions of 3.6.1 of the standard.

CASE 145. The injured employee clocked out at the end of his shift and then, as is the custom, he went to the shower room to clean up before going home. While taking a shower he claims he bumped his head on the window next to the shower. Enraged, he slammed the window shut, thereby causing the window pane to break. The falling glass cut the injured man's foot, resulting in two days lost time.

The committee decided that this injury should be included in the rates. Some of the members commented that it was apparently the practice in this plant for employees to take a shower at the end of the shift, and that the injury resulted from a hazard of the work place because a window projected into the shower space.

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CASE 146. On the day of this injury there was a very severe wind storm.

At 7:50 A.M., a female employee, age 55, was reporting for regularly scheduled work. She entered the plant property along a level 4-ft wide concrete sidewalk. After walking about 40 feet against strong wind gusts, she felt she could not go on against the wind. She turned to return to the Gate House. After turning, a gust of wind blew her down, fracturing and lacerating her right knee. She also received contusion of both ankles, jaw, and head.

A guard picked her up and carried her to the Gate House. She was taken to the doctor's office, then to the hospital.

The committee decided that this case should be considered an industrial injury and included in the injury rates.

In commenting on this case, the judges called attention to 2.1.1 of the standard which states that "in the course of employment" should be interpreted as including time spent in going from the entrance of plant property to the regular place of employment within the plant. In several previous decisions the committee has considered the plant gate as the entrance to plant property and, therefore, considered that this employee was in the course of her employment when this injury occurred.

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CASE 147. A general machinist was assigned to work in the machine shop on Saturday. He could be expected to handle any or all of the machines and equipment in the shop in the course of his scheduled duties.

By the individual's admission, sometime between 10 and 11 A.M. he entered the plant storeroom to seek a particular item. The clerk on duty that day was not in the storeroom at the moment and had posted a sign on the gate that read, "help yourself."

In a joking manner on seeing this sign, the machinist rolled a new automobile tire the length of the storeroom and asked a fellow employee, located outside the room, if he wanted a new tire in accordance with the wording of the clerk's notice.

The practical joke being completed, he then turned and lifted the tire while it was in a vertical position in preparation to returning it to the designated and original storage area. At this instant, he felt a kink in his back and started to experience discomfort. However, he proceeded to return the tire to its place and then worked the remainder of his shift until 4 P.M.

He did not report the injury to his foreman or to the first-aid station during Saturday at any time; he was not scheduled to work Sunday, nor did he notify anyone of his strain, but on Monday, his next normally scheduled workday, the machinist notified his foreman by telephone at approximately 3:30 P.M. that he could not report for work at 4 P.M. due to a sore back.

An appointment was made for him to visit the plant physician on Tuesday, and the diagnosis proved to be a sacroiliac sprain. The injury necessitated the loss of five consecutive scheduled working days extending from Monday through Friday.

The employee did not file any claim for workmen's compensation benefits and the company wanted to know if this case should be included in the industrial injury rate.

The committee decided that this case should be counted.

In discussing the case, the committee felt that in accordance with 2.4 of the standard the injury was the end result of a practical joke and therefore should be included in the rates. The fact that the employee did not press claim for compensation did not in any way alter the case.

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CASE 148. An electrical repairman atop a pole felt sudden pain in one eye. He was advised by his gang leader to report immediately to the plant dispensary which he did not do. Instead he went to his own family physician after work. He did report to the plant physician in the dispensary the following morning and reported that his doctor had removed a foreign body from the eye.

The company doctor described the injury as typical of the industrial eye case—metallic foreign matter embedded. He permitted the man to continue work and on each of the following two days, Thursday and Friday, the doctor reported definite improvement with the suggestion that the scar would be entirely gone and the eye completely healed by the middle of the following week.

On Monday, however, the eye looked irritated and the injury reactivated. The doctor immediately questioned the patient about his drinking habits. The patient admitted only moderate use but did state that he was up until 2 or 3 o'clock Saturday morning and Sunday morning playing in a dance orchestra. The doctor was firm in his opinion that this outside interference was the only cause for subsequent lost time due to hospital confinement for three days—Monday, Tuesday, and Wednesday. The eye then healed rapidly and the man went back to work.

The committee decided that this should be considered as a temporary total disability case and included in the rates.

In commenting upon the case, some of the members suggested that the injury arose out of and in the course of employment, and the code does not give any special consideration or exception to off-the-job aggravations of work injuries. Therefore, the case should be counted in accordance with the actual days lost.

# AMERICAN STANDARDS

## Status as of January 23, 1952

### Legend

*Standards Council.*—Approval by Standards Council is final approval as American Standard; usually requires 4 weeks.

*Board of Review.*—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

*Correlating Committee.*—Approve standards to send to Standards Council or Board of Review for final action; approval by correlating committee usually takes 4 weeks.

### Consumer

**In Standards Council—**

Standards for Rayon Fabrics, and Test Methods for Rayon Fabrics, L22

*Sponsor:* National Retail Dry Goods Association

### Electrical

**American Standard Just Approved—**

Electrical Resistance of Insulating Materials, Methods of Test, ASTM D 257-49 T; ASA C59.3-1952

*Sponsor:* American Society for Testing Materials

### Graphical Symbols

**American Standard Just Published—**

Graphical Symbols for Single (One) Line Electrical Engineering Diagrams, Z32.1.1-1951 $1.40

*Sponsors:* American Institute of Electrical Engineers; American Society of Mechanical Engineers

### Horticulture

**In Correlating Committee—**

Nursery Stock, Z60.1 (Revision of Z60.1-1949)

*Sponsor:* American Association of Nurserymen

### Mechanical

**In Board of Review—**

Physical Specimens of Surface Roughness and Lay, B46

*Sponsors:* American Society of Mechanical Engineers; Society of Automotive Engineers

**In Correlating Committee—**

Ring-Joint Gaskets and Grooves for Steel Pipe Flanges, B16.20

*Sponsors:* American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Assn; Manufacturers Standardization Society of the Valve and Fittings Industry

Accuracy of Engine and Tool Room Lathes, B5.16

*Sponsors:* American Society of Mechanical Engineers; Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association

**Submitted to ASA for Approval—**

Stainless Steel Pipe, B36.19

*Sponsors:* American Society of Mechanical Engineers; American Society for Testing Materials

**American Standard Reaffirmed—**

Preferred Numbers, Z17.1-1936 R 1947 R 1951

**Reaffirmation Requested—**

Cast-Iron Pipe Flanges and Flanged Fittings, 800 Lb Hydraulic Pressure, B16b1-1931

Cast-Iron Pipe Flanges and Fittings (For Maximum WSP of 25 Lb), B16b2-1931

Steel Socket Welding Fittings, B16.11-1946

Brass or Bronze Screwed Fittings, B16.15-1947

Cast-Iron Flanges and Fittings for Refrigerant Piping (Class 300), B16.16-1948

*Requested by:* American Society of Mechanical Engineers

### Optics

**In Board of Review—**

Nomenclature and Definitions in the Field of Colorimetry, Z58.1.2

*Sponsor:* Optical Society of America

### Petroleum Products and Lubricants

**American Standard Just Approved and Published—**

Test for Sulfur in Petroleum Products and Lubricants by Bomb Method; ASTM D 129-51; ASA Z11.13-1952 $.25

**American Standards Just Approved—**

Test for Sulfated Residue from New Lubricating Oils ASTM D 874-51; Z11.68-1951

Test for Knock Characteristics of Motor Fuels by the Research Method D 908-51; ASA Z11.69-1951

Test for Benzene and Toluene by Ultraviolet Spectrophotometry D 1017-51; Z11.70-1951

Test for Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates D 1019-51; ASA Z11.71-1951

Test for Apparent Viscosity of Lubricating Greases D 1092-51; ASA Z11.72-1951

Test for Sodium in Lubricating Oils and Lubricating Oil Additives D 1026-51 as revised on p 8 of 1951 D-2 report; ASA Z11.73-1951

Test for Flash Point by Tag Closed Tester ASTM D 56-51; ASA Z11.24-1951

Definitions of Terms Relative to Petroleum D 288-51; ASA Z11.28-1951

Test for Neutralization Value (Acid and Base Numbers) by Electrometric Titration D 664-51; ASA Z11.59-1951

Test for Distillation of Plant Spray Oils D 447-51T; ASA Z11.43-1951

Test for Unsulfonated Residue of Plant Spray Oils D 483-51T; ASA Z11.41-1951

Test for Carbon Residue of Petroleum Products (Ramsbottom Carbon Residue) D 524-51T; ASA Z11.47-1951

*Sponsor:* American Society for Testing Materials

**Withdrawal Requested—**

Test for Steam Emulsion of Lubricating Oils (ASTM D 157-36; ASA Z11.15-1936)

*Sponsor:* American Society for Testing Materials

### Safety

**In Correlating Committee—**

Code for Forging and Hot Metal Stamping, B24.1 (Revision of B24-1927)

*Sponsors:* Drop Forging Association; National Safety Council

Safety Code for Mechanical Power Transmission Apparatus (Revision of B15-1927)

*Sponsors:* Association of Casualty and Surety Companies, Accident Prevention Department; International Association of Governmental Labor Officials

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In 1895, H. J. Skelton, an iron merchant in the City of London, called for collective action to eliminate uneconomic individualism in the iron and steel industry. Referring to the fact that rolled steel girders were being imported into Britain from Belgium and Germany, he said, "In this country no two professional men are agreed upon the size and weight of girder to employ for given work, and the British manufacturer is everlastingly changing his rolls or appliances, at greatly increased cost of manufacture, to meet the irregular, unscientific requirements of professional architects and engineers."

Mr. Skelton's pleas for standardization led in 1901 to organization of the Engineering Standards Committee (now the British Standards Institution) by the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Institution of Naval Architects, and the Iron and Steel Institute. The committee's first office, at 28 Victoria Street, Westminster, London, still form part of the headquarters.

# Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

### 614.84 Fire, Fire Brigade

| AUSTRIA | ÖNORM |
|---|---|
| Bucket-type Fire Extinguishers | F 1060 |
| **DENMARK** | **DS** |
| Fire Hose Coupling, B-pressure, (75 mm) | 381 |
| Fire Hose Coupling, C-pressure, (52 mm) | 382 |
| Fire Hose Coupling, A-pressure, (102 mm) | 750 |
| Fire Hose Coupling, B-pressure, (25 mm) | 751 |
| **FRANCE** | **NF** |
| Hand Hose Drums on Wheels | S 61-521 |
| **GERMANY** | **DIN** |
| Fire Alarm Siren | 14611 |
| Two Types of Fireman Hooks | 14851/2 |
| Water-Jet Pump | 14422 |
| Safety Pressure Valves for Hose Lines | 14380 |
| Hand Type Fire Extinguishers | 14406,B1.1/2 |
| Mountings for Search-light | 14640 |

### 621.3 Electrical Engineering

| AUSTRIA | ÖNORM |
|---|---|
| Standard Voltages and Sparking Distances for Three-phase High-Voltage Installations (Exclusive of Machines, Transformers, Overhead Lines, Capacitors) | E 1101 |
| **DENMARK** | **DS** |
| Overhead Lines: Suspension Iron Hoop | 392.9 |
| **FINLAND** | **SFS** |
| Electric Stoves Details | C.III.6/7 |
| **FRANCE** | **NF** |
| Specifications for Electrical Steel Sheets | C 26 |
| Rules for the Installation of Medical Actinologic Instruments | C112 |
| Rules for the Installation of Starters of Electric Motors | C 120 |
| **GERMANY** | **DIN** |
| Steel Batteries (Nickel-Cadmium), Tubular Cells, Dimensions and Capacities | 40752 |
| Steel Batteries for Railway Lighting, Dimensions and Capacities | 40755 |
| Paper Capacitors, Class 3, 160v and 250v | 41152 |
| Coil Cores | 41287 |
| Ceramic Capacitors, Fixed | 41341 |
| Booster Transformers, Differential | 42514 |
| Spring Brush Holders | 43054,B1.1 |
| High-Voltage Safety Fuses | 43622 |
| Shunt Resistances | 43703 |
| Types of Scales for Measuring Instruments | 43802 |
| Wires for Rectangular Section, with Rounded Corners | 46433 |
| Porcelain Wall Bushing for Inside Installation | 48106,B1.1 |
| Fixture Wires | 49772 |
| Tubular and Open-mouth Binding Parts | 46207 |
| Wires for Lightning Arresters | 48801 |
| Mounting Board for Electric Meters | 43853,B1.1 |
| **POLAND** | **PN** |
| Insulating Oil for Transformers and Oil Switches | E-24000 |
| **RUMANIA** | **STAS** |
| Rules for Choosing Diameter of Insulating Tubes | 1445 |
| Stamped or Cast Terminal Lugs for Multi-Wire Copper Conductors | 1596 |
| Safety Insulator | 1652 |
| Roller Insulator | 1653 |
| 3-Phase Oil Transformers 10 ... 420 kva up to 6 kv, Clearance Dimensions | 1654 |
| Pressboard Type "Presspán" for Electrical Insulation | 1746 |
| Bare Electric Conductors | 1530 |
| Single-Pole Fuses up to 500 v | 1563 |
| Circuit Breakers, 200—350 a, 3—15 kv | 1564 |
| Overhead Line Clamps | 1566/7/8 |
| Marble Panel for LS Fuses up to 250 v | 1569 |
| Electric Cable Terminal Boxes and Fittings | 1571/2/3 |
| **SPAIN** | **UNE** |
| Power Capacitors for Motors | 20031 |
| Transformer Oils—Determination of Viscosity by Engler Viscosimeter | 7030 |
| **SWITZERLAND** | **SNV** |
| Industrial Plugs and Receptacles, Type 34, Three-pole, Neutral and Ground, 500v 10 amp | 24540 |
| Industrial Plugs and Receptacles, Type 33, Two-Pole and Ground, 380 v 10 amp | 24542 |
| Appliance Plugs and Receptacles, Type 7, Two-Pole and Ground, 380 v 10 amp | 24556 |
| Appliance Plugs and Receptacles, Type 8, Three-Pole, Neutral and Ground, 500 v 10 amp | 24557 |
| Electric Sockets with E 14 and E 27 Threads Tolerances | 24907 |
| Gages A and B to Check Contacts of Electric Sockets with E 14 and E 27 Thread | 24911 |

### 615.472 Surgical and Medical Instruments

| POLAND | PN |
|---|---|
| Surgical Knifehandle | Z-54002 |
| Probe, Grooved | Z-54091 |
| Anatomical Scissors | Z-55012 |
| Jaeger Plate | Z-57524 |
| Two-and Three-Prong Trachea Hooks | Z-57029/0 |
| Straight and Bent Surgical Knives | Z-58502/3/4 |
| Nine Standards for Different Kinds of Surgical Instruments, such as Probes, Surgical Needles, Amputation Knives, etc. | Z-54045,-54085, 55013,-55022, 56136,-57031, 57096,-57535,-58525 |
| Bone Shears | Z-55016 |
| Tong Depressor | Z-57056 |
| Various Surgical Instruments | Z-54000,-54054,-54078 |

### 69 Building Industry and Trade

| AUSTRIA | ÖNORM |
|---|---|
| Solid Walls and Partitions | B 3350 |
| Conventional Indication of Left - and Right - Opening Windows and Doors | B 1001 |
| Roofing Paper, Insulation Paper | B 3635 |
| **GERMANY** | **DIN** |
| Testing of Natural Stones | 52100 |
| Gypsum | 1168 |
| **ISRAEL** | **SI** |
| Calcium Silicate Bricks | 7 |
| Interlocking Concrete Roofing Tiles | 21 |
| **NETHERLANDS** | **N** |
| Requirements for Design and Construction of Buildings in Reinforced Concrete | 1009 |
| **POLAND** | **PN** |
| Form of Personal Records for Applicant for Work Supervisors | B-09252 |
| Wall Construction with used Bricks | B-02065 |
| Fat Lime, Industrial Type No. 3 | 948 |
| Cement, Lime and Gypsum Mortars | 1030 |
| Gypsum Plates, Types A and B | 1480 |

| | |
|---|---|
| Diatomite Compound for Thermal Insulation | 1708 |
| Diatomite Bricks for Thermal Insulation | 1836 |

### 621.82 Shafting, Journals, Bearings

| CHINA | CNS |
|---|---|
| Diameters of Transmission Shafts | 27 B3 |
| Speeds of Transmission Shafts and Pulleys | 28-30 B4-6 |

| GERMANY | DIN |
|---|---|
| Involute Spline | 5482,B1.3 |

| RUMANIA | STAS |
|---|---|
| Ball and Roller Bearings, Classification and Symbols | 1678/9 |

### 621.88 Means of Attachment, Fastenings

| AUSTRIA | ÖNORM |
|---|---|
| Studs, sizes M 3 to M 52 | M 5153 |
| Taper Pins | M 5401 |
| Various Standard Forms of Screw Ends | M 1804 |

| GERMANY | DIN |
|---|---|
| Tapered Pins with One Thread End | 258 |
| Hexagon Nuts for Pipes Whitworth Thread | 431 |
| Square-head Screws M 5 to M 24, Pointed End | 63300 |
| Different Types of Self-tapping Sheet Metal Screws | 7970-7975 |

| NETHERLANDS | N |
|---|---|
| Washers | 177 |
| Bright Crown Nuts, Metric Thread | 729 |

| POLAND | PN |
|---|---|
| Single-Head Wrench | M-65010 |
| Double-Head Wrench | M-65013 |
| Railroad Hook-Bolt with Hollow Head | K-82193 |

| RUMANIA | STAS |
|---|---|
| Metric Screw Threads, Diameters 1 to 68 mm Tolerances | 1727/8 |
| Bolts for Wood | 1755 |

### 672 Articles of Iron and Steel

| FRANCE | NF |
|---|---|
| Embossed Arch-Form Bottoms with Shoulders of Small Radius | E 81-101 |
| Embossed Arch-Form Bottoms with Shoulders of Large Radius | E 81-102 |
| Embossed Ellipsoid-Form Bottoms | E 81-103 |

| GERMANY | DIN |
|---|---|
| Covers and Bottoms for Preserve Cans | 2023 |

| POLAND | PN |
|---|---|
| Enamelled Ware: Plates | M-77152 |
| Galvanized Tubs | M-77315 |
| Soup Plates, Enamelled | M-77153 |
| Galvanized Tubs | M-77314 |

| RUMANIA | STAS |
|---|---|
| Galvanized Pails | 1359 |
| Horse Shoe, Military Type | 1376 |
| Horse Shoe, Commercial Type | 1377 |
| Calks for Horse Shoe | 1378 |
| Wrench for Horse Shoe Calks | 1379 |
| Horse Shoes | 1375 |
| Ox Shoes, Summer and Winter Types | 1389/0 |
| Welded Chains for Traction | 1528 |
| Cans for Preserved Food, General | 1687 |

### 661 Chemical Products in the Narrower Sense

| BRAZIL | IPT |
|---|---|
| Caustic Soda for Cleaning Purposes | 87 |

| CHINA | CNS |
|---|---|
| Forty-three Standards for Different Technical Chemicals, such as Various Acids, Sodium Compounds, Ammonium Compounds, Alcohols, Glycerines, Oils, etc, and Methods of their Analysis | 10-26,41 / 46,48-60, 62/3,81 / 92/3,114-119 — K1 thru K43 |

| ISRAEL | IS |
|---|---|
| Sodium Sulphite | 247 |
| Sodium Bisulphite (Sodium Metabisulphite) | 248 |
| Soda Ash, Technical | 251 |
| Caustic Soda, Technical | 252 |
| Edible Common Salt | 253 |
| Magnesium Chloride, Technical | 254 |
| Sodium Sulphate, Anhydrous, Technical | 255 |
| Glauber Salt (Sodium Sulphate, Decahydrate), Technical | 256 |
| Magnesium Sulphate (Epsom Salt), Technical | 257 |
| Potash Alum, Technical | 258 |
| Ammonia Alum, Technical | 259 |
| Aluminum Sulphate, Non-Ferric | 260 |
| Copper Sulphate, Technical | 251 |

| MEXICO | DGN |
|---|---|
| Litharge | K-41 |

| RUMANIA | STAS |
|---|---|
| Arsenic Trioxide, Technical | 1576 |
| Sodium and Potassium Tartrate | 1609 |
| Barium Chloride | 1610 |
| Acetic Anhydrite | 1645 |
| Aniline | 1774 |

### 664 Preparation and Preservation of Solid Foodstuff

| FRANCE | NF |
|---|---|
| Chocolate Bars and Tablets | V 53-001 |

| ISRAEL | SI |
|---|---|
| Halvah | 38 |

| RUMANIA | STAS |
|---|---|
| Food Preserves, Vegetable in Water | 1754 |
| Roasted Vegetable Products for Coffee Substitute | 1781 |
| Rahat (Candied Paste) | 1812 |
| Glazed Candies | 1841 |
| Preserved Apple Pulp | 970 |
| Preserved Plum Pulp | 971 |
| Cookies | 1227 |
| Canned Green Peas | 1503 |
| Different Kinds of Preserved Vegetables | 1416 thru 1425 |

| SPAIN | UNE |
|---|---|
| Preservation of Fresh Fishes During the Period from Catching to Delivery to the Market | 34800 |

### 681.2 Instruments, Instrumentology

| POLAND | PN |
|---|---|
| Seven Standards for Different Type of Callipers | M-53121/2/ 4/5/6/8/9 |

### 681.4 Optical Instruments

| POLAND | PN |
|---|---|
| Microscopes, Standard Magnification of— | N-53003 |
| Fork for the Mirror of Microscope | N-53011 |
| Magnifying Glass Holders | N-53051 |
| Preferred Rate of Magnification of Independent Optical Systems | M-54500 |

| GERMANY | DIN |
|---|---|
| Magnifying Glasses | 53383 |

| SPAIN | UNE |
|---|---|
| Simple Corrective Spectacle Lenses, Standard Range of Power, Diameter, Bending | 43003/4 |

### 697 Heating and Ventilating

| BELGIUM | NBN |
|---|---|
| Method of Testing for Determination of Heat Emission by Radiators | 236 |
| Conditions Common to all Systems of Central Heating and Air Conditioning | 237 |
| Specific Conditions for the Installation of Hot-Water Central Heating, Depending on Atmospheric Conditions | 238 |
| Acoustical Properties of Air Conditioning Installations | 263 |

| GERMANY | DIN |
|---|---|
| Rules for Ventilation of Assembly Halls | 1946 |

| POLAND | PN |
|---|---|
| Ventilation Air Ducts, Slip-on Types Assembly | G-43000 |
| Ventilation Air Ducts, Flanged Type, Assembly | G-43020 |
| Central Heating. Prevailing Lowest Temperatures in Various Localities of Rumania | 1488 |
| Central Heating. Standard Temperatures for Different Parts of the Building | 1542 |
| Central Heating Systems. General | 1579 |

# News Briefs

H. E. Hilton

• • **H. E. Hilton** is joining the staff of the American Standards Association as ASA's Washington representative, taking office in February. His headquarters will be at the National Bureau of Standards where he will continue the work formerly carried on by the late J. H. Courtney. This will involve working with the Bureau's Division of Building Technology in its projects in connection with the unification of building codes. Mr Hilton's nationwide acquaintance and experience in speaking before trade groups on building codes will be especially helpful in this assignment.

For the past three years Mr Hilton has been Executive Director and counsel of the National Automatic Sprinkler and Fire Control Association. Prior to that he was Assistant Manager of the Chamber of Commerce of the United States in Washington, D. C.

Mr Hilton had a number of years of engineering work at Des Moines University, and holds an B.A. and LL.B. from Drake University. He is a member of the American Trade Association Executives, the American Chamber of Commerce Executives, the American Bar Association, and is an associate member of the American Water Works Association and the Insurance and Fire Protection Section of the American Railroad Association.

• • **Power transformers** for the Aluminum Company of Canada's hydro-electric project in the wilds of northern Canada will conform to American Standards, it was reported recently. The Alcan Project when completed will provide about 1,600,000 hp—an output that will exceed that of any other single generating plant ever built, the report indicates. The waters of many lakes in the wilds 400 miles north of Vancouver near Alaska will be carried through the mountains in a 10-mile tunnel 25 feet in diameter to a power station near Kamano, near the Towns of Prince Rupert and Prince George. The power transformers total 400,000 kva, to operate at 300,000 and 275,000 volts. The cubicles to house the generator transformers and generators will be hewn out of solid rock 300 feet underground, reached by a long underground access tunnel.

• • **"Behind altogether too many regulatory campaigns** with reference to signs and outdoor advertising is someone with a bone to pick," comments *Signs of the Times*, November, 1951. Cited as a typical example is an ordinance adopted recently in a city of less than 10,000 population. This ordinance puts limitations on signs and outdoor advertising and requires licensing. Applications must be accompanied by detailed sketches and numbering of sign and by filing of owner's insurance; there is no city engineer to check the designs.

"It all got started," the magazine explains, "when the mayor of the city designed a building for the owner and had provided for a sign recessed in the front of the building. When the owner decided that an overhanging sign would be more effective and ordered one, the mayor got angry and warned the owner that he'd see that all signs would be required to be flush with the building."

Commenting that "this is the sort of thing that induces many signmen and outdoor advertising operators to feel conscientiously that in most instances no regulation or licensing is better for the public interest," the magazine calls attention to the fact that "practical provisions are recommended in the American Standard Building Requirements for Signs and Outdoor Display Structures published in 1949 by the American Standards Association.

• • **Reporting on the convention** of the American Trade Association Executives, Ray Vicker, Wall Street Journal, came up with a note on standardization. Mr Vicker reports: "Said one conventioner: 'You can go into any store, today, and buy an electric light bulb with full assurance that it will fit the socket at home. When it does, it isn't an accident. You can see the work of an association right there, for it took an association to bring competing manufacturers together to standardize on a size of socket, number of threads per inch, voltage, wiring, etc.'"

EDITOR'S NOTE—The association whose work is referred to is, of course, the American Standards Association. Mr Vicker might also have noted, however, that ASA is not only an association—it is an association of associations. Through its coordinating function, it offers the machinery by which associations of manufacturers, users, and others concerned with a product can agree on standard dimensions and specifications. The lamp sockets, threads per inch, electrical voltage, wiring, etc. mentioned by Mr Vicker offer only a hint of the many standards agreed upon through the procedures of the American Standards Association, and the wide variety of fields—mechanical, electrical, building, safety, consumer, and others—in which these standards are bringing about interchangeability and better understanding.

• • **Why is the standard height of a railing 42 inches above the floor?** John Dickinson, National Bureau of Standards, member of the Sectional Committee on Floor and Wall Openings, Railings, and Toe Boards, A12, offers the following ex-

planation. Long discussion in the committee, he says, led to the conclusion that to be safe a handrail should come at least up to the center of gravity of a man's body—42 inches was found to be a good average dimension.

• • **STANDARDIZATION'S report on the ECA survey** carried out by E. A. Pratt in cooperation with the American Standards Association ("Dollar Savings Through Standards," STANDARDIZATION, October, 1951) is to be published in a Portuguese translation in the official publication of the Portuguese Organization for Standardization. Name of the magazine is *Gazeta de Normalizacao*.

• • **What gloss is permitted on color chips** illustrating the four standard grays specified in American Standard Gray Finishes for Industrial Apparatus and Equipment, Z55.1-1950? This question has been referred by the American Standards Association to the Munsell Color Company which checked the gloss on the chips already made up and reported as follows:

Readings on the four color chips for American Standard Z55.1-1950 with reference to the 60-degree Gardner Glossmeter

| Sample Name | Reading | Reading with diffusion correction |
|---|---|---|
| Light Gray | 11.9 | 11.2 |
| Medium Light Gray | 9.9 | 9.5 |
| Medium Gray | 12.9 | 12.8 |
| Dark Gray | 22.4 | 22.3 |

The color chips illustrate the gray color specified in American Standard Z55.1-1950. Requirements for gloss are not specified in the standard.

• • **"A Happy Bunch"** (Reprinted from *Business Week's* "Readers Report," December 1, 1951)—"Gentlemen: Having mentioned the ASA in your article on European standardization (BW-Sep 29 '51, p 63), maybe you will be amused to know:

"Mr Thomas D. Jolly (vice-president of the Aluminum Co. of America) is the retiring president of the American Standards Association. He is being succeeded by Mr Roger E. Gay (president of the Bristol Brass Corp).

"It must be a happy group."

(Signed) R. Oakley Kennedy.

• • **Meetings** of the International Electrotechnical Commission Council and the following technical committees are scheduled at Scheveningen, Holland, September 3-13, 1952.

| | |
|---|---|
| TC 2 | Rotating Machinery |
| TC 2B | Dimensions of Motors |
| TC 3 | Graphical Symbols |
| TC 8 | Standard Voltages and Currents |
| TC 12 | Radio-Communication |
| TC 12-1 | Measurements |
| TC 12-2 | Safety |
| TC 12-3 | Components |
| TC 12-4 | Electronic Valves |
| TC 15 | Insulating Materials |
| | (Preparatory Committee of Experts) |
| TC 17 | Switchgear |
| TC 22 | Electronic Devices |
| TC 31 | Flameproof Enclosures |
| TC 33 | Power Capacitors |
| TC 35 | Dry Cells and Batteries |
| TC 36 | High-Voltage Tests—Insulators |

• • **Henry G. Lamb,** Safety Engineer, ASA staff, is a member of a recently appointed committee of the American Association of Industrial Hygiene to determine whether lantern slides for use at lectures are legible.

Mr Lamb has also been named to a Subcommittee on Nomenclature and Units of ASTM Committee D-22 on Atmospheric Pollution.

• • **Tables for Measurement of Petroleum** being compiled by the American Society for Testing Materials and the Institute of Petroleum (London) will be published in three volumes. Reason—to meet the requirements of all countries. Each of the volumes will be based on one of the three approved systems of measurement: (1) the U.S. System; (2) the Imperial (British) System;

One of the first known attempts to set up a standard in the Western world took place in the year 1120, at the time of the first Crusades. The sponsor was King Henry I of England, whom the Encyclopaedia Britannica describes as a well-educated monarch. Henry ordered that the ell, the ancient yard, should be the exact length of his arm, and commanded that distance henceforth to be the standard unit of comparison of lengths throughout his kingdom. The ell, 45 inches in length, is still used in a few areas for measuring cloth.

and (3) the Metric System. It is hoped that the U.S. and British volumes will be completed and made available early in 1952, ASTM declares.

• • **Wabash Filing Supplies, Inc,** of Wabash, Indiana, is asking dealers to cooperate with it in following the American Standard method of listing width first and height second when referring to the size of index and other record-keeping cards. Heretofore, Wabash has listed height first and width second. For many years, however, the company has been advocating adoption of a standard method by all manufacturers in the filing supply industry. Approval of the American Standard Size Designation for Index Cards and Record-Keeping Cards, X2.4-1951, provides such a standard and Wabash is changing its former practice in order to conform to the standard.

• • **Standard requirements for grounding caps** and receptacles rated 15 amperes, 250 volts have just been approved and published by the American Standards Association. They are included in the American Standard Requirements for Grounding Caps and Receptacles Rated 15 Amperes, 250 Volts, and 30 Amperes, 250 Volts C736-1951. This publication is an addition to, and partial revision of, American Standard for Attachment Plubs and Receptacles, C73-1941.

A great many industrial machines require the use of 250-volt caps for grounding the non-current-carrying metal parts of portable appliances and devices. The original standard provided for grounding caps and receptacles only up to 125 volts. The new addition was developed to comply with the National Electrical Code requirements for grounding machinery at higher voltages.

The new standard assures non-interchangeability between 125- and 250-volt circuits by specifying the use of tandem slots for 250-volt receptacles instead of the parallel slots used in most devices operating at a lower voltage.

The design of the 30-ampere, 250-volt cap and receptacle shown in the 1941 standard has been altered to provide non-interchangeability with the similar receptacle rated at 50 amperes. This was done by providing the grounding blade with a projection at right angles to the radial portion.

A committee sponsored by the National Electrical Manufacturers Association under ASA procedures developed this standard.

The American Standard Requirements for Grounding Caps and Receptacles Rated 15 Amperes, 250 Volts, and 30 Amperes, 250 Volts, C73b-1951, may be obtained from the American Standards Association at 35 cents per copy.

• • **Dr. Harold L. Maxwell,** Supervisor of General Consultants, E. I. du Pont de Nemours & Company, Inc., Wilmington, Delaware, has been elected a vice-president of the American Society for Testing Materials.

• • **Because of the increasing number** of requests for NEMA standards, the National Electrical Manufacturers Association has issued a new edition of its *List of Standards Publications* and its *Index to Standards Publications*. The Index is a revision of the 1948 edition. It includes descriptive paragraphs about each publication to help users of NEMA Standards in choosing those which best meet their needs. Copies can be obtained by writing the National Electrical Manufacturers Association, 155 East 44th Street, New York 17, N. Y.

• • **Ireland** is the thirty-second country to be represented in the International Organization for Standardization. Official Member-Body of ISO is the Institute for Industrial Research and Standards, Dublin.

• • **The Third National Standardization Conference,** sponsored by the American Standards Association, will be held in conjunction with the Centennial of Engineering in Chicago, September 8-9-10, 1952. The conference will take place at the Museum of Science and Industry. The three-day series of meetings will emphasize the role of standards in the many technological advances during the past century.

The 34th Annual Meeting of the American Standards Association will be held at The Waldorf-Astoria, New York, November 19, 1952. The Howard Coonley Medal and The Standards Medal will be presented at the Award Luncheon.

• • **A model emergency building code** ordinance that would permit local building officials to authorize the use of alternate materials and techniques while materials are in short supply is being offered for use by municipalities. The ordinance was written by officials of the Housing and Home Finance Agency and has been unanimously approved by HHFA's Advisory Committee on the Administration of Local Building Regulations.

Some codes permit local officials to approve alternate materials and methods under standards which will protect public health, safety, and welfare, but a large number do not, HHFA explains. Scarce materials required by local building regulations for construction and repair work needed by municipalities may not be available. Hence this emergency ordinance.

"If some shortages become as severe as they were in World War II, local building officials may find it desirable or necessary to authorize use, for example, of plastic or porcelain outlet boxes instead of steel in household electrical systems," explained HHFA's Acting Director of Research, Joseph H. Orendorff. "In some kinds of masonry construction, lightweight aggregates could be used instead of heavier sand and stone for concrete. This weight reduction in turn would make it possible to use less reinforcing and structural steel. Another way to save steel made possible by the ordinance would be through increase of stress allowances on steel members in buildings."

# International Meetings in New York

## June 9 - 21

TWELVE technical committees of the International Organization for Standardization are now scheduled to meet at Columbia University, New York, June 9-21. The American Standards Association is acting as host. The country holding the secretariat for each committee is shown in parentheses in the following list:

| | *June* |
|---|---|
| Ball and Roller Bearings, ISO/TC 4, subcommittees, and working groups (Sweden) | 16-19 |
| Cast Iron and Cast Steel, ISO/TC 25 (United Kingdom) | 9-11 |
| Cinematography, ISO/TC 36 (United States) | 9-10 |
| Iron and Steel, ISO/TC 17 (United Kingdom) | 9-11 |
| Lac, ISO/TC 50 (India) | 17-18 |
| Limits and Fits, ISO/TC 3 (France) | 9-11 |
| Machine Tools, ISO/TC 39 (France) | 16-18 |
| Mica, ISO/TC 56 (India) | 9-11 |
| Petroleum Products, ISO/TC 28 (United States) | 12-14 |
| Preferred Numbers, ISO/TC 19 (France) | 12-14 |
| Screw Threads, ISO/TC 1 and subcommittees or working groups (Sweden) | 11-14 |
| Textiles, ISO/TC 38, Subcommittees 1, 5, 6, and working groups (United Kingdom) | 13-17 |

The ISO Council will meet June 17-19. The General Assembly, made up of representatives of national standards associations of 34 countries, will meet June 20 and 21.

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• • **The new uniform building codes** recommended by the Building Officials Conference of America are favored by Michigan cities that are now considering adoption of a code or revision of an existing code. This was shown in a survey conducted by the Building Code Committee of the Michigan Society of Professional Engineers. The survey covered Michigan cities having a population of 6,000 or more.

The tabulation showed that 23 percent of the 82 cities surveyed do not have any code at all; and 27 percent of the remaining cities have codes which have not been revised within the last 10 years. With a very few exceptions, all municipalities surveyed that either have no codes or that have older codes are now considering the adoption of a code or the revision of their existing code.

As a result of this committee's work with various communities during the last few years, it has come to the conclusion that the adoption of a nationally recommended code, modified to meet local requirements, offers the most effective solution to the building code problem, N. O. Saulter, chairman, reports.

• • **Two ECA teams,** one on safety and the other on building, met with members of American Standards Association staff recently. Sixteen delegates from Austria, Germany, Ireland, the Netherlands, and Sweden had a session in the ASA offices on American Safety Standards and how they help to prevent industrial injuries in the United States.

An 11-man team, representing groups from Norway interested in building and construction problems, heard how American Standards are helping to bring about greater coordination in building codes used throughout the country and how the work of many different organizations is going into the development of up-to-date requirements for the performance of building materials and components.

Norway's interest in the use of a standard module was evident in the question, "What can we do about the difference between the American and British 4-inch module and the European module of 10 centimeters?" This difference of 0.16 inch is of special concern to the Norwegians because of their large export market for building materials. Even the comparatively small difference between 4 inches and 10 centimeters requires adjustments in their production lines, they explained.

• • **Albert Caquot,** President of the International Organization for Standardization, has received the Grand Croix de la Legion de'Honneur, which is the highest honor the French Government can bestow upon an outstanding person.

M. Caquot, famous in France for the invention of the "Caquot Sausage" (oblong observation balloon which baffled the German air force in World War I) has been interested in standardization since 1917. He was appointed member of the administrative counsel of AFNOR, the French national standardization body, when it was formed in 1926, and has taken a very active part in its work ever since.

• • **Czech industry set** for Soviet standard. *Reprinted from the New York Times, October 31, 1951.* "Vienna, Oct. 30—Czechoslovak industry will be converted to Soviet technical standards, according to an announcement made by Jiri Dostal, a leading engineer, in a speech before the Inventors Club in Prague, reported in the newspaper Lidove Noviny.

"Efforts to standardize industrial products began in Czechoslovakia in

1946, but the standards set up were based on Czechoslovak industrial experience. Now they must be changed again.

" 'We shall not normalize according to Czechoslovak standards,' M. Dostal explained, 'but will put ourselves in the forefront of the greatest system in the world—Soviet standardization.

" 'The transition to Soviet technical norms will require the help of all designers and industry as a whole. Staffs of translators will be created in norm offices and in industry to translate specifications for some 3,000 Soviet standards as the first step, with 5,000 to follow.

" 'Designers must also work out a unified technical terminology to facilitate trade with the Soviet Union, and the people's democracies.' "

## This Month's Standards Personality . . .

**E. F. Seaman,** for 20 years with the U. S. Navy, one of five employees to receive the Navy's Distinguished Service Award, November 1951 . . . is acting in a Navy Department civilian administrative capacity for the Armed Services Electro-Standards Agency, Fort Monmouth, N. J. . . . also in general standardization planning work for the Bureau of Ships. . . . This includes international standardization which brought him the Navy's Award. . . . Citation for "distinguished service as United States delegate on the International Electrotechnical Commission, the Aluminum Committee, and the Power Capacitator Committee." . . . Also for his work "as chairman of the Electronic Components Committee" at IEC meetings in Paris, 1950. . . . Member of ASA's Electrical Standards Committee and the U. S. National Committee of the IEC, he is chairman of IEC Subcommittee 3 on Components having to do with Radio. . . . Now one of U. S. delegates at IEC meetings at Estoril, Portugal, 1951. . . .

Educated in Electrical Engineering at Carnegie Institute of Technology, Pittsburgh, Pa., his professional career included engineering work with electrical utility companies in Pennsylvania, New York, Alabama, and Texas. . . . In 1931, he entered the employ of the Bureau of Engineering. . . . During service with the Navy Department he has been in electrical engineering work in the research, development, and standardization categories. . . . Now included in his duties is responsibility for policy and planning on conservation of critical materials. . . . He is editor of the *"Conservation Digest,"* a Bureau of Ships' monthly publication devoted to furthering the conservation program. . . . His hobbies—woodworking and photography, with, he says "boating as a deferred project."

### Plumbing Code

(*continued from page* 39)

still needs to be done.

In the years from 1935 to 1949, ASA Committee A40 developed several standards relative to plumbing systems. The standards for air gaps and back flow preventors in plumbing systems and the Plumbing Code itself were the most important of these. With the completion of the American Standard Plumbing Code, the question of harmonizing requirements in it with those in the four other well known and widely used codes became essential. This led to the organization of the Coordinating Committee for a National Plumbing Code. On this committee the following organizations are represented:

American Public Health Association
American Society of Mechanical Engineers
American Society of Sanitary Engineers
Building Officials Conference of America
Conference of State Sanitary Engineers
National Association of Master Plumbers
Uniform Plumbing Code Committee
Western Plumbing Officials Association

The Coordinating Committee mentioned earlier worked energetically and came up in June, 1951, with a report, which has been circulated by the American Society of Mechanical Engineers and the American Public Health Association, as sponsors for work on plumbing under ASA procedure, to a large number of national organizations to determine the acceptability of the report as a revision of American Standard Plumbing Code, A40.7-1949.

The degree of acceptance of the National Plumbing Code is promising. As of October 15, 1951, 237 cities either have adopted the National Plumbing Code as their city code or are considering the adoption. A number of agencies of the Federal Government have already adopted the code, as have several trade and professional groups interested in plumbing.

Shortly, it is expected that the ASME and the APHA will complete the canvass they have underway and submit the National Plumbing Code to the ASA for approval as American Standard.

A few more items and I am through. Standards for plumbing fixtures will cut down enormously the bins and bins of spare parts that are kept in stock in plumbing shops. On this point, I once visited a plumbing shop and asked the attendant how much his inventory could be cut down, if plumbing fixtures were standardized. His reply was, "Seventy-five percent." In other words, only a quarter of those parts were really necessary. Who is to blame for this situation? It is only the public, which has called, in the past at least, for excessive individuality of

fixtures. When you get a bill for plumbing that staggers, you, don't blame the plumber every time—sometimes it is your own fault.

But the most essential point to remember is that plumbing is a question of the health of the individual and of the public. A uniform national plumbing code will obtain this at a reasonable cost.

## ASA Awards

(*continued from page* 45)

tificates. The Board authorizes the presentation of certificates to new members of the Board and Standards Council, but may modify this plan by any future decision of the Board.

### Board on Awards

There is hereby established a Board on Awards, consisting of the Award Committee for The Howard Coonley Medal and the Award Committee for The Standards Medal. Each committee shall consider the recommendations submitted to it and shall prepare its own recommendation. The committees, however, acting as a Board on Awards shall confer before presenting the recommendations to the Board of Directors.

Upon the completion of award recommendations for the year 1952 the members of the Award Committee for The Howard Coonley Medal shall be designated by lot for replacement in 1953, 1954 and 1955, with one member being replaced annually thereafter. Suggestions as to replacement members shall be sought from the organization which originally suggested the individuals being replaced.

Upon the establishment of the Award Committee for The Standards Medal, the members shall be designated by lot for terms of one, two and three years, all replacements thereafter being for terms of three years.

### Nominations for Awards

It shall be the duty of the Managing Director in February of each year to call for nominations for award of both The Howard Coonley Medal and The Standards Medal from Member-Bodies, Associate Members and Company Members. In addition to the circular letter calling for nominations, the call shall also be published for at least two months in the Association's magazine.

Nominations for awards shall set forth clearly and in detail the particular accomplishments or actions which are considered to justify the award proposed. They shall be submitted in triplicate on plain paper without indication as to the sources of the nomination. A letter of transmittal for each such nomination is necessary for record purposes.

## Light for Learning

(*continued from page* 48)

adequate lighting of high schools has often precluded their full use for adult evening courses. One survey reported, at the start of the demonstration relighting program, showed that 9 percent of grade school children had defective vision, but this figure increased to 25 percent of high school students tested.

The program, carried primarily by the Northern California Electrical Bureau, which sponsored the relighting of 12 of the 17 model classrooms, has been successful in one of its primary aims: school authorities have been convinced that older classrooms with lighting below modern standards can be brought up, at moderate cost, to requirements of the American Standard Practice for School Lighting. This standard was developed by a sectional committee sponsored by the Illuminating Engineering Society and was approved by the American Standards Association.

## Standard Time

(*continued from page* 47)

"According to a book on Professor Dowd, edited by his son Charles N. Dowd, published in 1930, Professor Dowd first 'discussed the problem with railroad officials in private conversation, and before a committee of a Convention of Railroad Trunk Lines in New York City in October, 1869. They approved the outline of the plan and expressed a desire to see it worked out in detail.

"Professor Dowd then proceeded to put his proposal in a more definite and detailed form. His pamphlet, embodying the scheme he proposed, was published at Albany, N. Y., in 1870. Meanwhile, however, other standard time proposals were suggested. The *Railroad Gazette* for April 2, 1870, for instance, carried an editorial captioned "Time for the Continent," proposing a standard time for the entire nation.

"The organization which studied and weighed various schemes and proposals and which finally adopted Standard Time for the railroads of the United States was originally known as the "Meeting of General Superintendents for the Arrangement of a Summer Time Schedule," established in 1872. In 1875 its name was changed to the "General Time Convention." The secretary of the convention was William F. Allen, editor of the *Travelers Official Guide*. From that time until the adoption of standard time in November 1883, Allen headed up the work of the Convention and made an extensive study of the various proposals looking toward standardization. Standardization of time could result in but one of two things—the adoption of hourly zones to conform to the division of the earth into 360 degrees of longitude, already worked out in England, or the adoption of a single time throughout the United States. Because of the immense size of the United States, the latter plan appeared impracticable to railway managers, and was eliminated. This left only the hourly zone system for consideration.

"Professor Dowd's hourly zone plan, however, was not based upon Greenwich time but upon Washington time. And, under his plan, divisions between time zones were based upon straight longitudinal lines. Under the plan finally adopted by the railroads, the different time zones were based on Greenwich time, and divisions between the various zones were not straight longitudinal lines, but were so drawn as to allow some flexibility to the railroads in the adoption of the new time. Professor Dowd revised his scheme to conform

Greenwich time was concerned, but to Mr Allen's railroad plan so far as he did not revise his plan with reference to irregular zone limit lines. Therefore, the plan proposed by Mr Allen and finally adopted by the railroads differed from that proposed by Professor Dowd so far as the dividing line between zones was concerned.

### "Face Lifting"

(*continued from page 44*)

representing the leading rebuilders throughout the nation, has already presented a suggested listing of standards for the approval of the American Standards Association. There is a relatively hard-bitten group of individualists in the industry, and the trade association representing them is also "tough." The ARA will immediately expel any member found to be in violation of the standards adopted by the Association — after substantiation of the violation by investigation.

We consider it a privilege and an honor to be included as a Member-Body of ASA and look forward to many benefits accruing mutually.

### Pressure Piping

(*continued from page 40*)

#### Case No. 8

*Inquiry:* May alloy-steel tubing with flared fittings be used in the area where seamless steel pipe with socket welding fittings is now specified?

*Reply:* It is the opinion of the committee that alloy-steel tubing of adequate wall thickness and flared or welding fittings, are permissible in this area, providing in the case of flared fittings, a satisfactory flare can be made.

#### Case No. 9

*Inquiry:* What temperature should be used for designing instrument piping beyond the shutoff valve at the source connection?

*Reply:* Tests indicate that the temperatures in the connecting lines beyond the shutoff valve at the source connection are always lower than the saturated steam temperature corresponding to the main-line pressure. It is the opinion of the committee that the design temperature for connecting lines beyond the source valve need not exceed the saturation temperature corresponding to the main-line pressure.

In no case, however, shall the design temperature exceed the limits for the material as prescribed in the Code.

**Originally this was a ship propulsion motor rated 1500 hp, 600 rpm, 525 volts, but was rebuilt and sold for operating a cutterhead. It was mounted on a boom and used in dredging operations. Thrust bearings had to be installed so the motor could be operated up to an angle of 45 degrees. The cooling system was removed, the shunt fields paralleled, and the motor given a rating of 500 hp, 300/600 rpm at 230 volts.**

**In the rebuilding operation, new feet had to be welded on, and a new base fabricated. The new roller thrust bearings had to be of sufficient capacity to withstand the thrust of the motor armature weighing approximately three tons and operating up to a maximum of 45 degrees.**

Glow Electric Co.

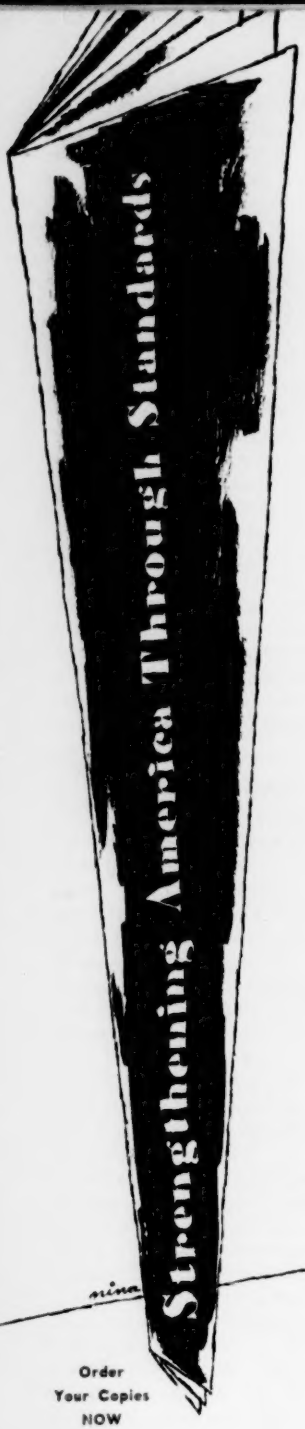
### How Safe Is Junior?

(*continued from page 43*)

hope to change the home hazards situation so that children will be as safe in their homes as their fathers are in their jobs. Today, he said, due to the efforts of industry and the assistance of the American Standards Association and other organizations interested in industrial safety, a man is "safer on the job than he is on the highway or in his own home."

Dr Wheatley stressed the fact that some accidents are more apt to occur at certain ages. He said, "Our studies show that falls due to rolling off tables, beds, etc., occur at or around 3 months of age; falls downstairs at or around 6-12 months; falls from windows between 2 and 4 years; poisoning occurs between 18 and 36 months as a rule."

In answering questions by representatives of Mothers Clubs who joined him on the program, he showed a pair of plastic scissors that cut nothing but paper, a plug to cover exposed wall sockets, and a plastic drinking container as examples of products that help to cut down the hazards to children.

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## Strengthening America Through Standards

*(The Proceedings of the Second National Standardization Conference, New York, October 22-24, 1951)*

It contains—

The Crusade for Standards—Herbert Hoover's witty comments on the meaning and history of standardization.

The Business Community's "free enterprise" philosophy as applied to standardization, presented by D. A. Hulcy, Pres, Chamber of Commerce of the U.S.

Industry and military viewpoints on production for defense—papers and discussion at a session sponsored by the American Ordnance Association. Speakers—K. H. Condit, Dean of the School of Engg, Princeton Univ; William C. Newberg, Pres, Dodge Div, Chrysler Corp; R. C. Sogge, Exec Dept, Gen Elec Co. Panel discussion—by industry and military representatives.

Standards for purchasing and how to use them—papers and discussion at a session sponsored by the Committee on Standardization, National Association of Purchasing Agents. Speakers—J. S. Davey, Asst Gen Sales Mgr, Russell, Burdsall and Ward Bolt and Nut Co; A. E. Pringle II, Vice-Pres, Pringle Elec Mfg Co; Robert J. Painter, Asst Sec, Amer Soc for Testing Materials; J. H. Foote, Vice-Pres, Commonwealth Services, Inc.

Materials conservation from the point of view of producer, consumer, and government—papers and discussion at a session sponsored by *Modern Industry* magazine. Speakers—Robert W. Wolcott, Chmn of the Bd, Lukens Steel Co and Chmn, Steel Ind Scrap Mobilization Com, Amer Iron and Steel Inst; C. W. Bryan, Jr, Pres, Pullman-Standard Car Mfg Co; Nathaniel Knowles, Deputy Administrator for Staff Services, Defense Production Adm.

Company experience with standards—papers at a session of the Company Member Conference. Speakers—Merwin Brandon, Vice-Pres, Underwriters' Labs; Gerald M. Magee, Research Engr, Assn of Amer Rrs; L. M. Dalcher, Supt of Stds and Pubs, Fairbanks, Morse and Co; R. J. Bisbee, Mgr, Quality Control, Westinghouse Elec Corp, Mansfield, Ohio.

Standards that affect you and me—The proposed uniform plumbing code, discussed by Dean Francis M. Dawson, Coll of Engg, State Univ of Iowa, and Chmn of the Coordinating Com for a Nat Plumbing Code; The Nat Elec Code, discussed by Alvah Small, Past Pres, Underwriters' Labs and Chmn, Elec Com, Nat Fire Protection Assn (ASA sectional committee on the Nat Elec Code).

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